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TRAVELS

INTO

NORTH AMERICA;

CONTAINING

ITS NATURAL HISTORY, AND

A circumſtantial Account of its Plantations and Agriculture in general,

WITH THE

CIVIL, ECCLESIASTICAL AND COMMERCIAL STATE OF THE COUNTRY,

The MANNERS of the INHABITANTS, and ſeveral curious and IMPORTANT REMARKS on various Subjects.

BY PETER KALM,

Profeſſor of Oeconomy in the Univerſity of *Aobo* in Swediſh *Finland*, and Member of the *Swediſh* Royal Academy of Sciences.

TRANSLATED INTO ENGLISH

BY JOHN REINHOLD FORSTER, F.A.S.

Enriched with a Map, ſeveral Cuts for the Illuſtration of Natural Hiſtory, and ſome additional Notes.

VOL. I.

WARRINGTON:

PRINTED by WILLIAM EYRES.

MDCCLXX.

1770

TO THE HONOURABLE

DAINES BARRINGTON,

One of his Majeſty's Juſtices of the Grand Seſſions for the Counties of ANGLESEY, CAERNARVON, and MERIONETH.

SIR,

I Preſume to prefix YOUR name to a performance which will in ſome meaſure diſplay to the *Britiſh* nation, the circumſtances of a country which is ſo happy as to be under its protection.

EVERY lover of knowledge, eſpecially of natural hiſtory, muſt be ſenſible of YOUR zealous endeavours to promote every branch of it. It was my great happineſs to fall within YOUR notice, and to receive very ſubſtantial and ſeaſonable favours from YOUR

patronage and recommendations. I ſhall ever remain mindful of YOUR generoſity and humanity towards me, but muſt lament that I have no other means of expreſſing my gratitude than by this publick acknowledgment.

ACCEPT then, DEAR SIR, my earneſt wiſhes for YOUR proſperity, and think me with the trueſt eſteem,

YOUR moſt obliged,

and obedient

humble Servant,

WARRINGTON,
JULY 25th. 1770.

John Reinhold Forſter.

PREFACE.

THE preſent Volume of Profeſſor *Kalm*'s Travels through *North America*, is originally written in the *Swediſh* language, but was immediately after tranſlated into the *German* by the two *Murray*'s, both of whom are *Swedes*, and one a pupil of Dr. *Linnæus*, and therefore we may be ſure that this tranſlation correſponds exactly with the original.

BARON *Sten Charles Bielke*, Vice preſident of the Court of Juſtice in *Finland*, was the firſt who made a propoſal to the Royal Academy of Sciences at *Stockholm*, to ſend an able man to the northern parts of *Siberia* and *Iceland*, as places which are partly under the ſame latitude with *Sweden*, and to make there ſuch obſervations and collections of ſeeds and plants, as would improve the *Swediſh* huſbandry, gardening, manu-

factures, arts and ſciences. Dr. *Linnæus* found the propoſal juſt, but he thought that a journey through *North America* would be yet of a more extenſive utility, than that through the before-mentioned countries; for the plants of *America* were then little known, and not ſcientifically deſcribed, and by ſeveral trials, it ſeemed probable that the greateſt part of the *North American* plants, would bear very well the *Swediſh* winters; and what was more important, a great many *American* plants promiſed to be very uſeful in huſbandry and phyſic.

THUS far this journey was a mere ſcheme; but as Captain *Triewald*, a man well known for his abilities in *England*, gave his *Obſervations on the Cultivation of Silk* in a ſeries of Memoirs to the Royal Academy of Sciences, and mentioned therein a kind of mulberry tree, which was diſcovered by Dr. *Linnæus*, and which bore the rigours of the *Swediſh* climate as well as a fir or pine tree; this circumſtance revived the propoſal of ſuch a journey in the year 1745. Count *Teſſin*, a nobleman of eſtabliſhed merit both in the political and learned world, becoming preſident of the Royal Academy, it was unanimouſly agreed upon to ſend Profeſſor *Kalm* to *North America*. The expences were at firſt a great obſtacle; but the Royal Academy wrote

wrote to the three univerſities to aſſiſt them in this great and uſeful undertaking. *Aobo* ſent firſt her ſmall contribution, *Lund* had nothing to ſpare, but *Upſala* made up this deficiency by a liberal contribution.

COUNT *Piper* was intreated to give a family exhibition to Mr. *Kalm*, which he readily promiſed, but as the Academy had obtained from the convocation of the univerſity of *Upſala* and the magiſtrates of *Stockholm*, another exhibition of the family of *Helmsfield* for Mr. *Kalm*, Count *Piper* refuſed to grant his exhibition, as being contrary to the ſtatutes of the univerſity and without any precedent, that one perſon ſhould enjoy two exhibitions. The preſent king of *Sweden* being then prince royal, ſucceſſor to the throne, and chancellor of the univerſity, wrote to the convocation, and expreſſed his wiſhes to have from the treaſury of the univerſity for ſo uſeful a purpoſe, about 1000 plates, or about 150l. ſterling. The univerſity complied generouſly with the deſire of her chancellor, and gave orders that the money ſhould be paid to the Royal Academy. The board for promoting manufactures gave 300 plates, or about 45l. Mr. *Kalm* ſpent in this journey his ſalary, and beſides very near 130l. of his own fortune, ſo that at his return he found

himſelf obliged to live upon a very ſmall pittance. The reſt of the expences the Academy made up from her own fund.

We on purpoſe have given this detail from Mr. *Kalm*'s long preface, to ſhew the reader with what public ſpirit this journey has been ſupported in a country where money is ſo ſcarce, and what a patriotic and laudable ardor for the promotion of ſciences in general, and eſpecially of natural hiſtory and huſbandry animates the univerſities, the public boards, and even the private perſons, in this cold climate, which goes ſo far, that they chuſe rather to ſpend their own private fortunes, than to give up ſo beneficial and uſeful a ſcheme. We have the ſame inſtance in Dr. *Haſſelquiſt*, who with a ſickly and conſumptive conſtitution, went to *Aſia Minor*, *Egypt* and *Paleſtine*, and collected ſuch great riches in new plants and animals, that Dr. *Linnæus*'s ſyſtem would never have contained ſo many ſpecies, had he not made uſe of theſe treaſures, which the queen of *Sweden* generouſly bought by paying the debts of Dr. *Haſſelquiſt*, who died in his attempt to promote natural hiſtory. The Reverend Mr. *Oſbeck* in his voyage to *China*, made an infinite number of uſeful and intereſting obſervations at the expence of his whole ſalary, and

publiſhed

publiſhed them by the contributions of his pariſh. The Reverend Mr. *Toreen* died by the fatigues of the ſame voyage, and left his letters publiſhed along with *Oſbeck*, as a monument of his fine genius, and ſpirit for promoting natural hiſtory. We here look upon the expences as trifling, but they are not ſo in *Sweden*, and therefore are certainly the beſt monuments to the honour of the nation and the great *Linnæus*, who in reſpect to natural hiſtory is the *primum mobile* of that country.

PROFESSOR *Kalm* having obtained leave of his Majeſty to be abſent from his poſt as profeſſor, and having got a paſſport, and recommendations to the ſeveral *Swediſh* miniſters at the courts of *London*, *Paris*, *Madrid*, and at the *Hague*, in order to obtain paſſports for him in their reſpective ſtates, ſet out from *Upſala*, the 16th. of *October* 1747, accompanied by *Lars Yungſtræm*, a gardener well ſkilled in the knowledge of plants and mechanics, and who had at the ſame time a good hand for drawing, whom he took into his ſervice. He then ſet ſail from *Gothenburgh*, the 11th. of *December* but a violent hurricane obliged the ſhip he was in to take ſhelter in the harbour of *Græmſtad* in *Norway*, from which place he made excurſions to *Arendal* and *Chriſtianſand*. He went

went again to ſea *February* the 8th. 1748, and arrived at *London* the 17th. of the ſame month. He ſtaid in *England* till *Auguſt* 15th. in which interval of time he made excurſions to *Woodford* in *Eſſex*, to little *Gaddeſden* in *Hertfordſhire*, where *William Ellis*, a man celebrated for his publications in huſbandry lived, but whoſe practical huſbandry Mr. *Kalm* found not to be equal to the theory laid down in his writings; he likewiſe ſaw *Ivinghoe* in *Buckinghamſhire*, *Eaton* and ſeveral other places, and all the curioſities and gardens in and about *London*: at laſt he went on board a ſhip, and traverſed the ocean to *Philadelphia* in *Penſylvania*, which was formerly called *New Sweden*, where he arrived *September* the 26th. The reſt of that year he employed in collecting ſeeds of trees and plants, and ſending them up to *Sweden*; and in ſeveral excurſions in the environs of *Philadelphia*. The winter he paſſed among his countrymen at *Raccoon* in *New Jerſey*. The next year 1749, Mr. *Kalm* went through *New Jerſey* and *New York* along the river *Hudſon* to *Albany*, and from thence, after having croſſed the lakes of St. *George* and *Champlain*, to *Montreal* and *Quebec*, he returned that very year againſt winter to *Philadelphia*, and ſent a new cargo of ſeeds, plants and curioſities to *Sweden*. In the

the year 1750, Mr. *Kalm* ſaw the weſtern parts of *Penſylvania* and the coaſt of *New Jerſey*; *Yungſtræm* ſtaid in the former province all the ſummer for the collection of ſeeds, and Prof. *Kalm* in the mean time paſſed *New York* and the blue mountains, went to *Albany*, then along the river *Mohawk* to the *Iroquois* nations, where he got acquainted with the *Mohawk*'s, *Oneida*'s, *Tuſkarora*'s, *Onandaga*'s and *Kayugaw*'s. He then viewed and navigated the great lake *Ontario*, and ſaw the celebrated fall at *Niagara*. In his return from his ſummer expedition, he croſſed the blue mountains in a different place, and in *October* again reached *Philadelphia*.

In the year 1751, the 13th. of *February*, he went at *Newcaſtle* on board a ſhip for *England*, and after a paſſage ſubject to many dangers in the moſt dreadful hurricanes, he arrived *March* the 27th. in the *Thames*, and two days after in *London*. He took paſſage for *Gothenburgh May* the 5th. and was the 16th. of the ſame month at the place of his deſtination, and the 13th. of *June* he again arrived at *Stockholm*, after having been on this truly uſeful expedition three years and eight months. He afterwards returned again to his place of profeſſor at *Aobo*, where in a ſmall garden of his own, he cultivates many

many hundreds of *American* plants, as there is not yet a public botanical garden for the uſe of the univerſity, and he with great expectation wiſhes to ſee what plants will bear the climate, and bear good and ripe ſeeds ſo far north. He publiſhed the account of his journey by intervals, for want of encouragement, and fearing the expences of publiſhing at once in a country where few bookſellers are found, and where the author muſt very often embrace the buſineſs of bookſeller, in order to reimburſe himſelf for the expences of his publication. He publiſhed in his firſt volume obſervations on *England*, and chiefly on its huſbandry, where he with the moſt minute ſcrupulouſneſs and detail, entered into the very minutiæ of this branch of his buſineſs for the benefit of his countrymen, and this ſubject he continued at the beginning of the ſecond volume. A paſſage croſs the *Atlantic* ocean is a new thing to *Swedes*, who are little uſed to it, unleſs they go in the few *Eaſt India* ſhips of their country. Every thing therefore was new to Mr. *Kalm*, and he omitted no circumſtance unobſerved which are repeated in all the navigators from the earlier times down to our own age. It would be a kind of injuſtice to the public, to give all this at large to the reader. All that part deſcribing

England

England and its curioſities and huſbandry we omitted. The particulars of the paſſage from *England* to *Penſylvania* we abridged; no circumſtance intereſting to natural hiſtory or to any other part of literature has been omitted. And from his arrival at *Philadelphia*, we give the original at large, except where we omitted ſome trifling circumſtances, viz. the way of eating oyſters, the art of making apple dumplings, and ſome more of the ſame nature, which ſtruck that *Swediſh* gentleman with their novelty.

Mr. *Kalm* makes uſe of the *Swediſh* meaſure; its foot is to the *Engliſh* foot, as 1134 to 1350. For his meteorological obſervations, he employed the thermometer of Prof. *Celſius* generally made uſe of in *Sweden*, and his was of *Celſius*'s own making; the interval from the point of freezing to the point of boiling water, is equally divided in this thermometer into 100 parts. In the names of plants, we have chiefly employed after his directions the *Linnæan* names in the laſt edition of his *Spec. Plantarum*, and *Syſtema Naturæ*, Vol. 2. But as his deſcriptions of animals, plants, and minerals are very ſhort, he promiſes to give them at large ſome time hence in a Latin work. He excuſes the negligence of his ſtile, from the time in which he methodiſed

ſed his obſervations, which was commonly at night, after being fatigued with the buſineſs of the preceding day, when his ſpirits were almoſt exhauſted, and he, incapable of that ſprightlineſs which commends ſo many curious performances of that nature.

He gives you his obſervations as they occurred day after day, which makes him a faithful relater, notwithſtanding it takes away all elegance of ſtyle, and often occaſions him to make very ſudden tranſitions from ſubjects very foreign to one another. This defect we will endeavour to ſupply by a very copious index at the end of the whole work, rather than derange the author's words, which are the more to be relied on, as being inſtantly committed to paper warm from his reflections.

At laſt he arms himſelf with a very noble indifference againſt the criticiſm of ſeveral people, founded on the great aim he had in view by his performance, which was no leſs than *public utility*. This he looks upon as the true reward of his pains and expences.

These are the contents of his long preface. We have nothing to add, but that we intend to go on in this work as ſoon as poſſible, hoping to be ſupported and encouraged in this undertaking, by a nation which

which is the poſſeſſor of that great continent, a great part of which is here accurately and impartially deſcribed, eſpecially at this time when *American* affairs attract the attention of the public.

We intend to join for the better illuſtration of the work, a map and drawings of *American* birds and animals which were not in the original. They will be copied from original drawings and real birds and animals from *North America*, which we have acceſs to, and muſt therefore give to this tranſlation a ſuperiority above the original and the *German* tranſlation.

An encourager of this work propoſed it as an improvement to the tranſlation of *Kalm*'s travels, to add in the margin the paging of the original, as by this means recourſe would be had eaſily to the quotations made by Dr. *Linnæus*. We would very readily have complied with this *deſideratum*, had we had the *Swediſh* edition of this work at hand, or had the work not been too far advanced at the time we got this kind hint: however this will be remedied by a copious index, which will certainly appear at the end of the whole work.

As we have not yet been able to procure a compleat liſt of the ſubſcribers and encouragers

ragers of this undertaking, we chooſe rather to poſtpone it, than to give an imperfect one: at the ſame time we aſſure the public, that it ſhall certainly appear in one of the ſubſequent volumes.

We find it neceſſary here to mention, that as many articles in Mr. *Kalm*'s travels required illuſtrations, the publiſher has taken the liberty to join here and there ſome notes, which are marked at the end with F. The other notes not thus marked were kindly communicated by the publiſher's friends.

Lastly, we take this opportunity to return our moſt ſincere thanks in this public manner to the ladies and gentlemen, who have generouſly in various ways exerted themſelves in promoting the publication of theſe uſeful remarks of an impartial, accurate and judicious foreigner, on a country which is at preſent ſo much the object of public deliberation and private converſation.

PETER

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Mr. Wilson, of Ainsworth.
Simon Wilson, Esq.
R. Wilbraham, of Rhode, Esq.
Mr. Wayland.
Mr. Thomas Wolrich.
James Woodcock, Esq. Gentleman Commoner of Brazennose College, Oxford.
Mr. Samuel Woodward.
The Rev. Mr. William Worthington.
Daniel Wray, Esq.
Mr. Wright.
Mr. Thomas Wroe.
Richard Wruckley, of Preston, Esq.

PETER

PETER KALM's TRAVELS.

Auguſt the 5th. 1748.

I WITH my ſervant *Lars Yungſtræm* (who joined to his abilities as gardener, a tolerable ſkill in mechanics and drawing) went at *Graveſend* on board the *Mary Gally*, Captain *Lawſon*, bound for *Philadelphia*; and though it was ſo late as ſix o'clock in the afternoon, we weighed anchor and ſailed a good way down the *Thames* before we again came to anchor.

Auguſt the 6th. VERY early in the morning we reſumed our voyage, and after a few hours ſailing we came to the mouth of the *Thames*, where we turned into the channel and ſailed along the *Kentiſh* coaſt, which conſiſts of ſteep and almoſt perpen-

dicular chalk hills, covered at the top with ſome ſoil and a fine verdure, and including ſtrata of flints, as it frequently is found in this kind of chalk-hills in the reſt of *England*. And we were delighted in viewing on them excellent corn fields, covered for the greateſt part with wheat, then ripening.

At ſix o'clock at night, we arrived at *Deal*, a little well known town, ſituate at the entrance of a bay expoſed to the ſouthern and eaſterly winds. Here commonly the outward bound ſhips provide themſelves with greens, freſh victuals, brandy, and many more articles. This trade, a fiſhery, and in the laſt war the equipping of privateers, has enriched the inhabitants.

Auguſt the 7th. When the tide was out, I ſaw numbers of fiſhermen reſorting to the ſandy ſhallow places, where they find round ſmall eminences cauſed by the excrements of the *log worms*, or *ſea worms*, (*Lumbrici marini. Linn.*) who live in the holes leading to theſe hillocks, ſometimes eighteen inches deep, and they are then dug out with a ſmall three tacked iron fork and uſed as baits.

Auguſt the 8th. At three o'clock we tided down the channel, paſſed *Dover*, and ſaw plainly the opinion of the celebrated *Camden* in his *Britannia* confirmed, that here

here *England* had been formerly joined to *France* and *Flanders* by an iſthmus. Both ſhores form here two oppoſite points; and both are formed of the ſame chalk hills, which have the ſame configuration, ſo that a perſon acquainted with the *Engliſh* coaſts and approaching thoſe of *Picardy* afterwards, without knowing them to be ſuch, would certainly take them to be the *Engliſh* ones.*

Auguſt the 9th—12th. We tided and alternately ſailed down the channel, and paſſed *Dungneſs*, *Fairlight*, *the Iſle of Wight*, *Portſmouth*, *the Peninſula of Portland* and *Bolthead*, a point behind which *Plymouth* lies; during all which time we had very little wind.

Auguſt the 13th. Towards night we got out of the *Engliſh* channel into the *Bay of Biſcay*.

Auguſt the 14th. We had contrary wind, and this increaſed the rolling of the ſhip, for it is generally remarked that the *Bay of Biſcay* has the greateſt and broadeſt waves, which are of equal ſize with thoſe between *America* and *Europe*; they are commonly half an *Engliſh* mile in length, and have a height proportionable to it. The *Baltic*

* The ſame opinion has been confirmed by Mr. *Buffon* in his *Hiſt. Naturelle. tom.* 1. *art.* xix. Vol. 2. p. 419 of the edit. in twelves. F.

and the *German* ocean has on the contrary ſhort and broken waves.

WHENEVER an animal is killed on board the ſhip, the ſailors commonly hang ſome freſh pieces of meat for a while into the ſea, and it is ſaid, it then keeps better.

Auguſt the 15th. THE ſame ſwell of the ſea ſtill continued, but the waves began to ſmooth, and a foam ſwimming on them was ſaid to forebode in calm weather, a continuance of the ſame for ſome days.

ABOUT noon a north eaſterly breeze ſprung up, and in the afternoon it blew more, and this gave us a fine ſpectacle; for the great waves rolled the water in great ſheets, in one direction, and the north eaſterly wind curled the ſurface of theſe waves quite in another. By the beating and daſhing of the waves againſt one another, with a more than ordinary violence, we could ſee that we paſſed a current, whoſe direction the captain could not determine.

Auguſt the 16th—21ſt. THE ſame favourable breeze continued to our great comfort and amazement, for the captain obſerved that it was very uncommon to meet with an eaſterly or north-eaſterly wind between *Europe* and the *Azores* (which the ſailors call the *Weſtern Iſlands*) for more than two days together; for the more common

mon wind is here a weſterly one: but beyond the *Azores* they find a great variety of winds, eſpecially about this time of the year; nor do the weſterly winds continue long beyond theſe iſles; and to this it is owing, that when navigators have paſſed the *Azores*, they think they have performed one half of the voyage, although in reality it be but one third part. Theſe iſles come ſeldom in ſight; for the navigators keep off them, on account of the dangerous rocks under water ſurrounding them. Upon obſervation and compariſon of the journal, we found that we were in forty-three deg. twenty-four min. north lat. and thirty and a half degrees weſt long. from *London*.

Auguſt the 22d. ABOUT noon the captain aſſured us, that in twenty-four hours we ſhould have a ſouth-weſt wind: and upon my enquiring into the reaſons of his foretelling this with certainty, he pointed at ſome clouds in the ſouth-weſt, whoſe points turned towards north-eaſt, and ſaid they were occaſioned by a wind from the oppoſite quarter. At this time I was told we were about half way to *Penſylvania*.

Auguſt the 23d. ABOUT ſeven o'clock in the morning the expected ſouth-weſt wind ſprung up, and ſoon accelerated our

courſe ſo much, that we went at the rate of eight knots an hour.

Auguſt the 24th. THE wind ſhifted and was in our teeth. We were told by ſome of the crew to expect a little ſtorm, the higher clouds being very thin and ſtriped and ſcattered about the ſky like parcels of combed wool, or ſo many ſkains of yarn, which they ſaid forebode a ſtorm. Theſe ſtriped clouds ran north-weſt and ſouth-eaſt, in the direction of the wind we then had. Towards night the wind abated and we had a perfect calm, which is a ſign of a change of wind.

Auguſt the 25th. and 26th. A WEST wind ſprung up and grew ſtronger and ſtronger, ſo that at laſt the waves waſhed our deck.

Auguſt the 27th. IN the morning we got a better wind, which went through various points of the compaſs and brought on a ſtorm from north-eaſt towards night.

OUR captain told me an obſervation founded on long experience, *viz.* that though the winds changed frequently in the *Atlantic* ocean, eſpecially in ſummer time, the moſt frequent however was the weſtern, and this accounts for the paſſage from *America* to *Europe* commonly being ſhorter, than

than that from *Europe* to *America*. Beſides this, the winds in the *Atlantic* during ſummer are frequently partial, ſo that a ſtorm may rage on one part of it, and within a few miles of the place little or no ſtorm at all may be felt. In winter the winds are more conſtant, extenſive and violent; ſo that then the ſame wind reigns on the greater part of the ocean for a good while, and cauſes greater waves than in ſummer.

Auguſt the 30th. As I had obſerved the night before ſome ſtrong flaſhes of lightening without any ſubſequent clap of thunder, I enquired of our captain, whether he could aſſign any reaſons for it. He told me theſe phœnomena were pretty common, and the conſequence of a preceding heat in the atmoſphere; but that when lightenings were obſerved in winter, prudent navigators were uſed to reef their ſails, as they are by this ſign certain of an impendent ſtorm; and ſo likewiſe in that ſeaſon, a cloud riſing from the north-weſt, is an infallible forerunner of a great tempeſt.

September the 7th. As we had the firſt day of the month contrary wind, on the ſecond it ſhifted to the north, was again contrary the third, and fair the fourth and following days. The fifth we were in forty deg.

three min. north lat. and between fifty-three and fifty-four deg. weſt long. from *London*.

Besides the common waves rolling with the wind, we met on the 4th. and 5th. inſt. with waves coming from ſouth-weſt, which the captain gave as a mark of a former ſtorm from that quarter in this neighbourhood.

September the 8th. We croſſed by a moderate wind, a ſea with the higheſt waves we met on the whole paſſage, attributed by the captain to the diviſion between the great ocean and the inner *American* gulf; and ſoon after we met with waves greatly inferior to thoſe we obſerved before.

September the 9th. In the afternoon we remarked that in ſome places the colour of the ſea (which had been hitherto of a deep blue) was changed into a paler hue; ſome of theſe ſpots were narrow ſtripes of twelve or fourteen fathoms breadth, of a pale green colour, which is ſuppoſed to be cauſed by the ſand, or as ſome ſay, by the weeds under water.

September the 12th. We were becalmed that day, and as we in this ſituation obſerved a ſhip, which we ſuſpected to be a *Spaniſh* privateer, our fear was very great; but we ſaw ſome days after our arrival at *Philadel-*

Philadelphia the ſame ſhip arrive, and heard that they ſeeing us had been under the ſame apprehenſions with ourſelves.

September the 13th. CAPTAIN *Lawſon*, who kept his bed for the greater part of the voyage, on account of an indiſpoſition, aſſured us yeſterday we were in all appearance very near *America:* but as the mate was of a different opinion, and as the ſailors could ſee no land from the head of the maſt, nor find ground by the lead, we ſteered on directly towards the land. About three o'clock in the morning the captain gave orders to heave the lead, and we found but ten fathom: the ſecond mate himſelf took the lead and called out ten and fourteen fathoms, but a moment after the ſhip ſtruck on the ſand, and this ſhock was followed by four other very violent ones. The conſternation was incredible; and very juſtly might it be ſo; for there were above eighty perſons on board, and the ſhip had but one boat: but happily our ſhip got off again, after having been turned. At day break, which followed ſoon after (for the accident happened half an hour paſt four) we ſaw the continent of *America* within a *Swediſh* mile before us: the coaſt was whitiſh, low, and higher up covered with firs. We found out, that the ſand we ſtruck on, lay oppoſite

ſite *Arcadia* in *Maryland*, in thirty-ſeven deg. fifty min. North lat.

We coaſted the ſhores of *Maryland* all the day, but not being able to reach cape *Hinlopen*, where we intended to take a pilot on board, we cruized all night before the bay of *Delaware*. The darkneſs of the night made us expect a rain, but we found that only a copious fall of dew enſued, which made our coats quite wet, and the pages of a book, accidently left open on the deck, were in half an hours time after ſun-ſetting likewiſe wet, and we were told by the captain and the ſailors that both in *England* and in *America* a copious dew was commonly followed by a hot and ſultry day.

September the 14th. We ſaw land on our larboard in the weſt, which appeared to be low, white, ſandy, and higher up the country covered with firs. cape *Hinlopen* is a head of land running into the ſea from the weſtern ſhore, and has a village on it. The eaſtern ſhore belongs here to *New Jerſey*, and the weſtern to *Penſylvania*. The bay of *Delaware* has many ſands, and from four to eleven fathom water.

The fine woods of oak, hiccory and firs covering both ſhores made a fine appearance, and were partly employed in ſhip-building

building at *Philadelphia*; for which purpoſe every year ſome *Engliſh* captains take a paſſage in autumn to this town, and ſuperintend the building of new ſhips during winter, with which they go to ſea next ſpring: and at this time it was more uſual than common, as the *French* and *Spaniſh* privateers had taken many *Engliſh* merchant ſhips.

A LITTLE after noon we reached the mouth of *Delaware* river, which is here about three *Engliſh* miles broad, but decreaſes gradually ſo much, that it is ſcarcely a mile broad at *Philadelphia*.

HERE we were delighted in ſeeing now and then between the woods ſome farm houſes ſurrounded with corn fields, paſtures well-ſtocked with cattle, and meadows covered with fine hay; and more than one ſenſe was agreeably affected, when the wind brought to us the fineſt efflúvia of odoriferous plants and flowers, or that of the freſh made hay: theſe agreeable ſenſations and the fine ſcenery of nature on this continent, ſo new to us, continued till it grew quite dark.

HERE I will return to ſea, and give the reader a ſhort view of the various occurrences belonging to Natural-Hiſtory, during our croſſing the Ocean.

OF

Of ſea weeds *(Fucus linn.)* we ſaw *Auguſt* the 16th. and 17th. a kind which had a ſimilarity to a bunch of onions tied together, theſe bunches were of the ſize of the fiſt, and of a white colour. Near the coaſt of *America* within the *American* gulf, *September* the 11th. we met likewiſe with ſeveral ſea weeds, one ſpecies of which was called by the ſailors *rock-weed*; another kind looked like a ſtring of pearls, and another was white, about a foot long, narrow, every where equally wide and quite ſtrait. From *Auguſt* the 24th. to *September* the 11th. we ſaw no other weeds, but thoſe commonly going under the name of *Gulf-weed*, becauſe they are ſuppoſed to come from the gulf of *Florida*; others call it *Sargazo*, and Dr. *Linnæus*, *Fucus natans*. Its *ſtalk* is very ſlender, rotundato-angulated, and of a dark green, it has many *branches* and each of them has numerous *leaves* diſpoſed in a row, they are extremely thin, are ſerrated, and are a line or a line and a half wide, ſo that they bear a great reſemblance to the leaves of *Iceland-moſs*; their colour is a yellowiſh green. Its *fruit* in a great meaſure reſembles unripe juniper berries, is round, greeniſh yellow, almoſt ſmooth on the outſide, and grows under the leaves on ſhort footſtalks, of two or three lines

lines length; under each leaf are from one to three berries, but I never have ſeen them exceed that number. Some berries were ſmall, and when cut were quite hollow and conſiſted of a thin peel only, which is calculated to communicate their buoyancy to the whole plant. The leaves grow in proportion narrower, as they approach the extremities of the branches: their upper ſides are ſmooth, the ribs are on the under ſides, and there likewiſe appear ſmall roots of two, three or four lines length. I was told by our mate that gulf weed, dried and pounded, was given in *America* to women in childbed, and beſides this it is alſo uſed there in fevers. The whole ocean is as if it were covered with this weed, and it muſt alſo be in immenſe quantities in the gulf of *Florida*, from whence all this driving on the ocean is ſaid to come. Several little *ſhells* pointed like horns, and *Eſcharæ* or *Horn wracks* are frequently found on it: and ſeldom is there one bundle of this plant to be met with, which does not contain either a minute *ſhrimp*, or a ſmall *crab*, the latter of which is the *Cancer minutus* of Dr. *Linnæus*. Of theſe I collected eight, and of the former three, all which I put in a glaſs with water: the little ſhrimp moved as ſwift as an arrow round the glaſs, but ſometimes

times its motion was ſlow, and ſometimes it ſtood ſtill on one ſide, or at the bottom of the glaſs. If one of the little crabs approached, it was ſeized by its forepaws, killed and ſucked; for which reaſon they were careful to avoid their fate. It was quite of the ſhape of a ſhrimp; in ſwimming it moved always on one ſide, the ſides and the tail moving alternately. It was capable of putting its forepaws entirely into its mouth: its antennæ were in continual motion. Having left theſe little ſhrimps together with the crabs during night, I found on the morning all the crabs killed and eaten by the ſhrimps. The former moved when alive with incredible ſwiftneſs in the water. Sometimes when they were quite at the bottom of the glaſs, with a motion ſomething like to that of a *Puceron* or *Podura* of *Linnæus*; they came in a moment to the ſurface of the water. In ſwimming they moved all their feet very cloſe, ſometimes they held them down as other crabs do, ſometimes they lay on their backs, but as ſoon as the motion of their feet ceaſed, they always ſunk to the bottom. The remaining ſhrimps I preſerved in ſpirits, and the loſs of my little crabs was ſoon repaired by other ſpecimens which are ſo plentiful in each of the floating bundles of gulf-weed.

For

For a more minute deſcription of which I muſt refer the reader to another work, I intend to publiſh. In ſome places we ſaw a *crab* of the ſize of the fiſt, ſwimming by the continual motion of its feet, which being at reſt, the animal began immediately to ſink. And one time I met with a great red *crawfiſh*, or *lobſter*, floating on the ſurface of the ſea.

BLUBBERS, or *Meduſæ Linn*, we found of three kinds: the firſt is the *Meduſa aurita Linn*; it is round, purple coloured, opens like a bag, and in it are as if it were four white rings, their ſize varies from one inch diameter to ſix inches; they have not that nettling and burning quality which other blubbers have, ſuch for inſtance as are on the coaſt of *Norway*, and in the ocean. Theſe we met chiefly in the channel and in the *Bay of Biſcay*.

AFTER having croſſed more than half of the ocean between *Europe* and *America*, we met with a kind of blubber, which is known to Sailors by the name of the *Spaniſh* or *Portugueze man of War*, it looks like a great bladder, or the lungs of a quadruped, compreſſed on both ſides, about ſix inches in diameter, of a fine purple-red colour, and when touched by the naked ſkin of the human body, it cauſes a greater burning than any

any other kind of blubber. They are often overturned by the rolling of the waves, but they are again ſtanding up in an inſtant, and keep the ſharp or narrow ſide uppermoſt.

WITHIN the *American* gulf we ſaw not only theſe *Spaniſh men of War*, but another kind too, for which the Sailors had no other name but that of a blubber. It was of the ſize of a pewter plate, brown in the middle, with a pale margin, which was in continual motion.

OF the *Lepas anatifera Linn.* I ſaw on the 30th. of *Auguſt* a log of wood, which floated on the ocean, quite covered. Of *inſects* I ſaw in the channel, when we were in ſight of the *Iſle of Wight* ſeveral white butterflies, very like to the *Papilio Braſſicæ Linn.* They never ſettled, and by their venturing at ſo great a diſtance from land they cauſed us juſt aſtoniſhment.

SOME *common flies* were in our cabbin alive during the whole voyage, and it cannot therefore be determined whether they were originally in *America*, or whether they came over with the Europeans.

OF *Cetaceous fiſh* we met with *Porpeſſes*, or as ſome ſailors call them *Sea-hogs* (Delphinus*

* The name of *Porpeſſe* is certainly derived from the name *Porco-*

phinus Phocæna, Linn.) firſt in the channel and then they continued every where on this ſide the *Azores*, where they are the only fiſh navigators meet with; but beyond theſe iſles they are ſeldom ſeen, till again in the neighbourhood of *America* we ſaw them equally frequent to the very mouth of *Delaware* river. They always appeared in ſhoals, ſome of which conſiſted of upwards of an hundred individuals; their ſwimming was very ſwift, and though they often ſwam along ſide of our ſhip, being taken as it were with the noiſe cauſed by the ſhip cutting the waves, they however ſoon outwent her, when they were tired with ſtaring at her. They are from four to eight feet long, have a bill like in ſhape to that of a gooſe, a white belly, and leap up into the air frequently four feet high, and from four to eight feet in length; though their ſnoring indicates the effort which a leap of

Porcopeſce, given to this genus by the *Italians*; and it is remarkable that almoſt all the *European* nations conſpired in calling them *Sea-hogs*, their name being in *German Meer Schwein*; the *Daniſh*, *Swediſh*, and *Norvegian*, *Marſuin*, from whence the *French* borrowed their *Marſouin*. The natives of *Iceland* call them *Suinhual*, i. e. a *Swine-whale*, and ſo likewiſe the *Slavonian* nations have their *Swinia Morſkaya*. Whether this conſent ariſes from their rooting the ſand at the bottom of the ſea in queſt of Sand-eels and Sea-worms like ſwine, or from the vaſt quantity of lard ſurrounding their bodies is uncertain. F.

that nature coſts them. Our ſailors made many vain attempts to ſtrike one of them with the harp iron from the forecaſtle, when they came within reach, but their velocity always eluded their ſkill.

ANOTHER cetaceous fiſh, of the *Dolphin* kind,* with which we met, is called by the ſailors *Bottle-noſe*, it ſwims in great ſhoals, has a head like a bottle, and is killed by a harpoon, and is ſometimes eaten. Theſe fiſh are very large, and ſome fully twelve feet long; their ſhape, and manner of tumbling and ſwimming make them nearly related to Porpeſſes. They are to be met with every where in the ocean from the channel to the very neighbourhood of *America*.

ONE *Whale* we ſaw at a diſtance, and knew it by the water which it ſpouted up.

A *Dog-fiſh* of a conſiderable ſize followed the ſhip for a little while, but it was ſoon out of ſight, without our being able to determine to which ſpecies it belonged: this

* Mr. *Kalm* is certainly miſtaken in reckoning the *Bottle-noſe* amongſt the *Dolphin* kind; it has no teeth in its mouth as all the fiſh of that claſs have, and therefore belongs to the firſt order of the Whales, or thoſe that are without teeth. See Mr. *Pennant*'s Britiſh Zoology Vol. 3. p. 43. where it is called the *beaked Whale*, and very well deſcribed; a drawing is ſeen in the explanatory table, n. I. Perhaps it would not be improper to call it *Balæna ampullata*. F.

this was the only *cartilaginous* fiſh we ſaw on the whole paſſage.

Of the *bony* fiſh, we ſaw ſeveral beyond the *Azores*, but never one on this ſide of thoſe iſles, one of them was of a large ſize, and we ſaw it at a diſtance; the ſailors called it an *Albecor*, and it is Dr. *Linnæus*'s *Scomber Thynnus*.

The *Dolphin* of the *Engliſh* is the *Dorado* of the *Portugueze*, and Dr. *Linnæus* calls it *Coryphæna Hippuris*; it is about two feet and a half long, near the head ſix inches deep, and three inches broad; from the head the *Dolphin* decreaſes on all ſides towards the tail, where its perpendicular depth is one inch and a half, and its breadth hardly one inch. The colour of the back near the head is a fine green on a ſilver ground, but near the tail of a deep blue; the belly is white, and ſometimes mixed with a deep yellow, on the ſides it has ſome round pale brown ſpots. It has ſix and not ſeven fins as was imagined; two of them are on the breaſt, two on the belly, one at the tail extending to the anus, and one along the whole back, which is of a fine blue: when the fiſh is juſt taken the extremities of the moſt outward rays in the tail were eight inches one from another. Their motion when they

ſwam behind, or along ſide of the ſhip was very ſlow, and gave a fair opportunity to hit them with the harpoon, though ſome are taken with a hook and line, and a bait of chicken bowels, ſmall fiſh, or pieces of his own ſpecies, or the flying fiſh, which latter are their chief food: and it is by their chaſing them, that the flying fiſh leave their element to find ſhelter in one to which they are ſtrangers. The Dolphins ſometimes leap a fathom out of the water, and love to ſwim about caſks and logs of wood, that ſometimes drive in the ſea. They are eaten with thick butter, when boiled, and ſometimes fried, and afford a palatable food, but rather ſomewhat dry. In the bellies of the fiſh of this ſpecies which we caught, ſeveral animals were found, viz. an *Oſtracion*; a little fiſh with blue eyes, which was yet alive, being juſt the moment before ſwallowed, and meaſuring two inches in length; another little fiſh; a curious marine inſect, and a flying fiſh, all which not yet being damaged by digeſtion, I preſerved in ſpirits.

THE *Flying Fiſh (Exocoetus volitans, Linn.)* are always ſeen in great ſhoals, ſometimes of an hundred or more getting at once out of the water, being purſued by greater fiſh, and chiefly by Dolphins; they riſe about a yard, and even a fathom above the water in

in their flight, but this latter height they only are at, when they take their flight from the top of a wave; and ſometimes it is ſaid they fall on the deck of ſhips. The greateſt diſtance they fly, is a good muſket-ſhot, and this they perform in leſs than half a minute's time; their motion is ſomewhat like that of the *yellow-hammer*, (*Emberiza Citrinella*, *Linn.*) It is very remarkable that I found the courſe they took always to be againſt the wind, and though I was contradicted by the ſailors, who affirmed that they went at any direction, I nevertheleſs was confirmed in my opinion by a careful obſervation during the whole voyage, according to which they fly conſtantly either directly againſt the wind, or ſomewhat in an oblique direction.*

We ſaw likewiſe the fiſh called *Bonetos*, (*Scomber Pelamys*, *Linn.*) they were likewiſe in ſhoals, hunting ſome ſmaller fiſh, which chaſe cauſed a noiſe like to that of a caſcade, becauſe they were all ſwimming cloſe in a body; but they always kept out of the reach of our harpoons.

* In Mr. *Pennant*'s *Britiſh Zoology* vol. 3. p. 282. is the beſt account of this fiſh to be met with; and in his *Britiſh Zoology, illuſtrated by Plates and brief explanations* is plate xliv. a good and exact drawing of the fiſh, the upper figure repreſenting it in front, the lower ſideways. F.

Of *amphibious animals*, or *reptiles*; we met twice with a *Turtle*, one of which was ſleeping, the other ſwam without taking notice of our ſhip; both were of two feet diameter.

Birds are pretty frequently ſeen on the ocean, though *Aquatic Birds* are more common than *Land Birds*.

The *Petrel (Procellaria Pelagica, Linn.)* was our companion from the channel to the ſhores of *America*. Flocks of this bird were always about our ſhip, chiefly in that part of the ſea, which being cut by the ſhip, forms a ſmooth ſurface, where they frequently ſeem to ſettle, though always on the wing. They pick up or examine every thing that falls accidentally from the ſhip, or is thrown over board: little fiſh ſeem to be their chief food; in day time they are ſilent, in the dark clamorous; they are reputed to forebode a ſtorm, for which reaſon the ſailors diſliking their company, complimented them with the name of *witches*; but they are as frequent in fair weather, without a ſtorm following their appearance. To me it appeared as if they ſtayed ſometimes half an hour and longer under the waves, and the ſailors aſſured me they did. They look like ſwallows, and like them they ſkim ſometimes on the water.

The

THE *Shearwater (Procellaria Puffinus, Linn.)* is another ſea-bird, which we ſaw every where on our voyage, from the channel to the *American* coaſts; it has much the appearance and ſize of the dark-grey *Sea-gull*, or of a Duck; it has a brown back, and commonly a white ring round its neck, and a peculiar ſlow way of flying. We plainly ſaw ſome of theſe birds feed on fiſh.

THE *Tropic bird (Phaëton æthereus, Linn.)* has very much the ſhape of a gull, but two very long feathers, which it has in its tail, diſtinguiſh it enough from any other bird; its flight is often exceedingly high: the firſt of this kind we met, was at about forty deg. north lat. and forty-nine or fifty deg. weſt long. from *London*.

COMMON *Gulls (Larus canus, Linn.)* we ſaw, when we were oppoſite the *Land's End*, the moſt weſterly cape of *England*, and when according to our reckoning we were oppoſite *Ireland*.

TERNS *(Sterna hirundo, Linn.)* though of a ſomewhat darker colour than the common ones, we found after the forty-firſt deg. of north lat. and forty-ſeventh deg. weſt long. from *London*, very plentifully, and ſometimes in flocks of ſome hundreds; ſometimes they ſettled, as if tired, on our ſhip.

WITHIN the *American* gulph we diſcovered a ſea-bird at a little diſtance from the ſhip, which the ſailors called a *Sea-hen*.

LAND-BIRDS are now and then ſeen at ſea, and ſometimes at a good diſtance from any land, ſo that it is often difficult, to account for their appearance in ſo uncommon a place. *Auguſt* the 18th. we ſaw a bird which ſetled on our ſhip, and was perfectly like the *great Titmouſe, (Parus major Linn:)* upon an attempt to catch it, it got behind the ſails, and could never be caught.

September the 1ſt. WE obſerved ſome Land-birds flying about our ſhip, which we took for *Sand Martins (Hirundo riparia Linn.)* ſometimes they ſettled on our ſhip, or on the ſails; they were of a greyiſh brown colour on their back, their breaſt white, and the tail ſomewhat furcated; a heavy ſhower of rain drove them afterwards away. *September* the 2d. a *Swallow* fluttered about the ſhip, and ſometimes it ſettled on the maſt; it ſeemed to be very tired; ſeveral times it approached our cabin windows, as if it was willing to take ſhelter there. Theſe caſes happened about forty deg. north lat. and between forty-ſeven and forty-nine deg. weſt long. from *London*, and alſo about twenty deg. long. or more

more than nine hundred and twenty ſea miles from any land whatſoever.

September the 10th. within the *American* gulph a large bird, which we took for an *Owl*, and likewiſe a little bird ſettled on our ſails.

September the 12th. a *Wood-pecker* ſettled on our rigging: its back was of a ſpeckled grey, and it ſeemed extremely fatigued. And another land-bird of the *paſſerine claſs*, endeavoured to take ſhelter and reſt on our ſhip.

BEFORE I entirely take leave of the ſea, I will communicate my obſervations on two curious phœnomena.

IN the channel and in the ocean we ſaw at night time, *ſparks of fire*, as if flowing on the water, eſpecially where it was agitated, ſometimes one ſingle ſpark ſwam for the ſpace of more than one minute on the ocean before it vaniſhed. The ſailors obſerved them commonly to appear during, and after a ſtorm from the north, and that often the ſea is as if it were full of fire, and that ſome ſuch ſhining ſparks would likewiſe ſtick to the maſts and ſails.

SOMETIMES this light had not the appearance of ſparks, but looked rather like the phoſphoreſcence of putrid wood.

THE *Thames*-water which made our proviſion of freſh water, is reputed to be the beſt

beſt of any. It not only ſettled in the oak caſks it is kept in, but becomes in a little time ſtinking, when ſtopped up; however this nauſeous ſmell it ſoon looſes, after being filled into large ſtone juggs, and expoſed to the open freſh air for two or three hours together. Often the vapours ariſing from a caſk which has been kept cloſe and ſtopped up for a great while take fire, if a candle is held near them when the caſk is opened, and the *Thames* water is thought to have more of this quality than any other; though I was told that this even happened with any other water in the ſame circumſtances.

Now I can reſume my narrative, and therefore obſerve that we afterwards ſailed on the river with a fair wind, pretty late at night. In the dawn of the evening we paſſed by *Newcaſtle*, a little town on the weſtern ſhore of the river *Delaware*. It was already ſo dark, that we could hardly know it, but by the light which appeared through ſome of the windows. The *Dutch* are ſaid to have been the firſt founders of this place, which is therefore reckoned the moſt ancient in the country, even more ancient than *Philadelphia*. But its trade can by no means be compared with the *Philadelphia* trade, though its ſituation has more advantages in ſeveral reſpects; one of which is, that

that the river ſeldom freezes before it, and conſequently ſhips can come in and go out at any time. But near *Philadelphia* it is almoſt every winter covered with ice, ſo that navigation is interrupted for ſome weeks together. But the country about *Philadelphia* and farther up, being highly cultivated, and the people bringing all their goods to that place, *Newcaſtle* muſt always be inferior to it.

I MENTIONED, that the *Dutch* laid the foundations of this town. This happened at the time, when this country was as yet ſubject to *Sweden*. But the *Dutch* crept in, and intended by degrees to diſpoſſeſs the *Swedes*, as a people who had taken poſſeſſion of their property. They ſucceeded in their attempt; for the *Swedes* not being able to bear with this encroachment, came to a war, in which the *Dutch* got the better. But they did not enjoy the fruits of their victory long: for a few years after, the *Engliſh* came and deprived them of their acquiſition, and have ever ſince continued in the undiſturbed poſſeſſion of the country. Somewhat later at night we caſt anchor, the pilot not venturing to carry the ſhip up the river in the dark, ſeveral ſands being in the way.

September 15th. IN the dawn of the morning

morning we weighed anchor, and continued our voyage up the river. The country was inhabited almoſt every where on both ſides. The farm-houſes were however pretty far aſunder. About eight o'clock in the morning we ſailed by the little town of *Cheſter*, on the weſtern ſide of the river. In this town, our mate, who was born in *Philadelphia*, ſhewed me the places, which the *Swedes* ſtill inhabit.

At laſt we arrived in *Philadelphia* about ten o'Clock in the morning. We had not been more than ſix weeks, or (to ſpeak more accurately) not quite forty one days on our voyage from *Graveſend* to this place, including the time we ſpent at *Deal*, in ſupplying ourſelves with the neceſſary freſh proviſions, &c. our voyage was therefore reckoned one of the ſhorteſt. For it is common in winter time to be fourteen, nineteen, or more weeks in coming from *Graveſend* to *Philadelphia*. Hardly any body ever had a more pleaſant voyage over this great ocean, than we had. Captain *Lawſon* affirmed this ſeveral times. Nay he aſſured us he had never ſeen ſuch calm weather in this ocean, though he had croſſed it very often. The wind was generally ſo favourable that a boat of a middling ſize might have ſailed in perfect ſafety. The

ſea

ſea never went over our cabin, and but once over the deck, and that was only in a ſwell. The weather indeed was ſo clear, that a great number of the *Germans* on board ſlept on the deck. The cabin windows needed not the ſhutters. All theſe are circumſtances which ſhow the uncommon goodneſs of the weather.

CAPTAIN *Lawſon*'s civility increaſed the pleaſure of the voyage. For he ſhewed me all the friendſhip, that he could have ſhewn to any of his relations.

As ſoon as we were come to the town, and had caſt anchor, many of the inhabitants came on board, to enquire for Letters. They took all thoſe which they could carry, either for themſelves or for their friends. Thoſe, which remained, the captain ordered to be carried on ſhore, and to be brought into a coffee-houſe, where every body could make enquiry for them, and by this means he was rid of the trouble of delivering them himſelf. I afterwards went on ſhore with him. But before he went, he ſtrictly charged the ſecond mate, to let no one of the *German* refugees out of the ſhip, unleſs he paid for his paſſage, or ſome body elſe paid for him, or bought him.

ON my leaving *London* I received letters of

of recommendation from Mr. *Abraham Spalding*, Mr. *Peter Collinſon*, Dr. *Mitchel*, and others to their friends here. It was eaſy for me therefore to get acquaintance. Mr. *Benjamin Franklin*, to whom *Penſylvania* is indebted for its welfare, and the learned world for many new diſcoveries in Electricity, was the firſt, who took notice of me, and introduced me to many of his friends. He gave me all neceſſary inſtructions, and ſhewed me his kindneſs on many occaſions.

I WENT to day accompanied by Mr. *Jacob Bengtſon*, a member of the *Swediſh* conſiſtory and the ſculptor *Guſtavus Heſſelius*, to ſee the town and the fields which lay before it. (The former is brother of the rev. Meſſrs. *Andrew* and *Samuel Heſſelius*, both miniſters at *Chriſtiana* in new *Sweden*, and of the late Dr. *John Heſſelius* in the provinces of *Nerik* and *Wermeland*). My new friend had followed his brother *Andrew* in 1711 to this country, and had ſince lived in it. I found that I was now come into a new world. Whenever I looked to the ground, I every where found ſuch plants as I had never ſeen before. When I ſaw a tree, I was forced to ſtop, and aſk thoſe who accompanied me, how it was called. The firſt plant which ſtruck my eyes

eyes was an *Andropogon*, or a kind of graſs, and graſs is a part of Botany I always delighted in. I was ſeized with terror at the thought of ranging ſo many new and unknown parts of natural hiſtory. At firſt I only conſidered the plants, without venturing a more accurate examination.

At night I took up my lodging with a grocer who was a quaker, and I met with very good honeſt people in this houſe, ſuch as moſt people of this profeſſion appeared to me, I and my *Yungſtræm*, the companion of my voyage, had a room, candles, beds, attendance, and three meals a day, if we choſe to have ſo many, for twenty ſhillings per week in *Penſylvania* currency. But wood, waſhing and wine, if required, were to be paid for beſides.

September the 16th. Before I proceed I muſt give a ſhort deſcription of *Philadelphia*, which I ſhall frequently mention in the ſequel of my travels. I here put down ſeveral particulars which I marked during my ſtay at that place, as a help to my memory.

Philadelphia, the capital of *Penſylvania*, a province which makes part of what formerly was called *New Sweden* is one of the principal towns in *North-America*; and next to *Boſton* the greateſt. It is ſituated

almoſt

almoſt in the center of the *Engliſh* colonies, and its lat. is thirty nine deg. and fifty min. but its weſt long. from *London* near ſeventy five deg.

THIS town was built in the year 1683, or as others ſay in 1682, by the well known quaker *William Pen*, who got this whole province by a grant from *Charles the ſecond*, king of *England*; after *Sweden* had given up its claims to it. According to *Pen*'s plan the town was to have been built upon a piece of land which is formed by the union of the rivers *Delaware* and *Skulkill*, in a quadrangular form, two *Engliſh* miles long and one broad. The eaſtern ſide would therefore have been bounded by the *Delaware*, and the weſtern by the *Skulkill*. They had actually begun to build houſes on both theſe rivers; for eight capital ſtreets, each two *Engliſh* miles long, and ſixteen leſſer ſtreets (or lanes) acroſs them, each one mile in length, were marked out, with a conſiderable breadth, and in ſtrait lines. The place was at that time almoſt an entire wilderneſs covered with thick foreſts, and belonged to three *Swediſh* brothers called *Sven*'s-*Sœner* (Sons of *Sven*) who had ſettled in it. They with difficulty left the place, the ſituation of which was very advantageous. But at laſt they were per-

perſuaded to it by *Pen*, who gave them a few *Engliſh* miles from that place twice the ſpace of country they inhabited. However *Pen* himſelf and his deſcendants after him, have conſiderably leſſened the ground belonging to them, by repeated menſurations, under pretence that they had taken more than they ought.

But the inhabitants could not be got in ſufficient number to fill a place of ſuch extent. The plan therefore about the river *Skulkill* was laid aſide till more favourable circumſtances ſhould occur, and the houſes were only built along the *Delaware*. This river flows along the eaſtern ſide of the town, is of great advantage to its trade, and gives a fine proſpect. The houſes which had already been built upon the *Skulkill* were tranſplanted hitherto by degrees. This town accordingly lies in a very pleaſant country, from north to ſouth along the river. It meaſures ſomewhat more than an *Engliſh* mile in length; and its breadth in ſome places is half a mile or more. The ground is flat and conſiſts of ſand mixed with a little clay. Experience has ſhewn that the air of this place is very healthy.

The ſtreets are regular, fine, and moſt of them are fifty foot, *Engliſh* meaſure, broad;

Arch-ſtreet meaſures ſixty ſix feet in breadth, and *Market-ſtreet* or the principal ſtreet, where the market is kept, near a hundred. Thoſe which run longitudinally, or from north to ſouth are ſeven, excluſive of a little one, which runs along the river, to the ſouth of the market, and is called *Water-ſtreet*. The lanes which go acroſs, and were intended to reach from the *Delaware* to the *Skulkill*, are eight in number. They do not go quite from eaſt to weſt, but deviate a little from that direction. All the ſtreets except two which are neareſt to the river, run in a ſtraight line, and make right angles at the interſections. Some are paved, others are not; and it ſeems leſs neceſſary ſince the ground is ſandy, and therefore ſoon abſorbs the wet. But in moſt of the ſtreets is a pavement of flags, a fathom or more broad, laid before the houſes, and poſts put on the outſide three or four fathom aſunder. Under the roofs are gutters which are carefully connected with pipes, and by this means, thoſe who walk under them, when it rains, or when the ſnow melts, need not fear being wetted by the dropping from the roofs.

The houſes make a good appearance, are frequently ſeveral ſtories high, and built either of bricks or of ſtone; but the former

former are more commonly uſed, ſince bricks are made before the town, and are well burnt. The ſtone which has been employed in the building of other houſes, is a mixture of black or grey *glimmer*, running in undulated veins, and of a looſe, and quite ſmall grained *limeſtone*, which run ſcattered between the bendings of the other veins, and are of a grey colour, excepting here and there ſome ſingle grains of ſand, of a paler hue. The glimmer makes the greateſt part of the ſtone; but the mixture is ſometimes of another kind, as I ſhall relate hereafter under the article, eleventh of *October*. This ſtone is now got in great quantities in the country, is eaſily cut, and has the good quality of not attracting the moiſture in a wet ſeaſon. Very good lime is burnt every where hereabouts, for maſonry.

The houſes are covered with ſhingles. The wood for this purpoſe is taken from the *Cupreſſus thyoides*, *Linn.* or a tree which *Swedes* here call *the white juniper-tree*, and the *Engliſh*, *the white cedar*. Swamps and Moraſſes formerly were full of them, but at preſent theſe trees are for the greateſt part cut down, and no attempt has as yet been made to plant new ones. The wood is very light, rots leſs than any other in

this country, and for that reaſon is exceeding good for roofs. For it is not too heavy for the walls, and will ſerve for forty or fifty years together. But many people already begin to fear, that theſe roofs will in time be looked upon as having been very detrimental to the city. For being ſo very light, moſt people who have built their houſes of ſtone, or bricks, have been led to make their walls extremely thin. But at preſent this kind of wood is almoſt entirely deſtroyed. Whenever therefore in proceſs of time theſe roofs decay, the people will be obliged to have recourſe to the heavier materials of tiles, or the like, which the walls will not be ſtrong enough to bear. The roof will therefore require ſupports, or the people be obliged to pull down the walls and to build new ones, or to take other ſteps for ſecuring them. Several people have already in late years begun to make roofs of tiles.

AMONG the publick buildings I will firſt mention churches, of which there are ſeveral, for God is ſerved in various ways in this country.

1. THE *Engliſh eſtabliſhed church* ſtands in the northern part of the town, at ſome diſtance from the market, and is the fineſt of all. It has a little, inconſiderable ſteeple,

ſteeple, in which is a bell to be rung when it is time to go to church, and on burials. It has likewiſe a clock which ſtrikes the hours. This building which is called Chriſt church, was founded towards the end of the laſt century, but has lately been rebuilt and more adorned. It has two miniſters who get the greateſt part of their ſalary from *England*. In the beginning of this century, the *Swediſh* miniſter the Rev. Mr. *Rudmann*, performed the functions of a clergyman to the *Engliſh* congregation for near two years, during the abſence of their own clergyman.

2. THE *Swediſh church*, which is otherwiſe called the church of *Weekacko*, is on the ſouthern part of the town, and almoſt without it, on the river's ſide, and its ſituation is therefore more agreeable than that of any other. I ſhall have an oportunity of deſcribing it more exactly, when I ſhall ſpeak of the *Swedes* in particular, who live in this place.

3. THE *German Lutheran church*, is on the north-weſt ſide of the town. On my arrival in *America* it had a little ſteeple, but that being but up by an ignorant architect, before the walls of the church were quite dry, they leaned forwards by its weight, and therefore they were forced

to pull it down again in the autumn of the year 1750. About that time the congregation received a fine organ from *Germany*. They have only one miniſter, who likewiſe preaches at another Lutheran church in *Germantown*. He preaches alternately one ſunday in that church, and another in this. The firſt clergyman which the Lutherans had in this town, was the Rev. Mr. *Muhlenberg*, who laid the foundations of this church in 1743, and being called to another place afterwards, the rev. Mr. *Brunholz* from *Sleſwick* was his ſucceſſor, and is yet here. Both theſe gentlemen were ſent to this place from *Hall* in *Saxony*, and have been a great advantage to it by their peculiar talent of preaching in an edifying manner. A little while before this church was built, the *Lutheran Germans* had no clergyman for themſelves, ſo that the every-where beloved *Swediſh* miniſter at *Weekacko*, Mr. *Dylander*, preached likewiſe to them. He therefore preached three ſermons every ſunday; the firſt early in the morning to the *Germans*; the ſecond to the *Swedes*, and the third in the afternoon to the *Engliſh*, and beſides this he went all the week into the country and inſtructed the *Germans* who lived ſeparately there. He therefore frequently preached ſixteen

ſermons

ſermons a week. And after his death, which happened in *November* 1741, the *Germans* firſt wrote to *Germany* for a clergyman for themſelves. This congregation is at preſent very numerous, ſo that every ſunday the church is very much crowded. It has two galleries, but no veſtry. They do not ſing the collects, but read them before the altar.

4. The *old Preſbyterian church*, is not far from the market, and on the ſouth-ſide of *market-ſtreet*. It is of a middling ſize, and built in the year 1704, as the inſcription on the northern pediment ſhews. The roof is built almoſt hemiſpherical, or at leaſt forms a hexagon. The whole building ſtands from north to ſouth, for the preſbyterians do not regard, as other people do, whether their churches look towards a certain point of the heavens or not.

5. The *new Preſbyterian church* was built in the year 1750, by the *New-lights* in the north-weſtern part of the town. By the name of *New-lights*, are underſtood the people who have, from different religions, become proſelytes to the well known *Whitefield*, who in the years 1739, 1740, and likewiſe in 1744 and 1745 travelled through almoſt all the *Engliſh* colonies. His delivery, his extraordinary zeal, and

other talents ſo well adapted to the intelects of his hearers, made him ſo popular that he frequently, eſpecially in the two firſt years, got from eight thouſand to twenty thouſand hearers in the fields. His intention in theſe travels, was to collect money for an orphans hoſpital which had been erected in *Georgia*. He here frequently collected ſeventy pounds ſterling at one ſermon; nay, at two ſermons which he preached in the year 1740, both on one ſunday, at *Philadelphia*, he got an hundred and fifty pounds. The proſelytes of this man, or the above-mentioned *new-lights*, are at preſent merely a ſect of preſbyterians. For though *Whitefield* was originally a clergyman of the *Engliſh* church, yet he deviated by little and little from her doctrines; and on arriving in the year 1744 at *Boſton* in *New England*, he diſputed with the Preſbyterians about their doctrines, ſo much that he almoſt entirely embraced them. For *Whitefield* was no great diſputant, and could therefore eaſily be led by theſe cunning people, whitherſoever they would have him. This likewiſe during his latter ſtay in *America* cauſed his audience to be leſs numerous than during the firſt. The *new-lights* built firſt in the year 1741, a great houſe in the weſtern part of the town,

town, to hold divine ſervice in. But a diviſion ariſing amongſt them after the departure of *Whitefield,* and beſides on other accounts, the building was ſold to the town in the beginning of the year 1750, and deſtined for a ſchool. The *new-lights* then built a church which I call the *new Preſbyterian* one. On its eaſtern pediment is the following inſcription, in golden letters: *Templum Preſbyterianum, annuente numine, erectum, Anno Dom.* MDCCL.

6. The *old German reformed church* is built in the weſt north-weſt part of the town, and looks like the church in the *Ladugoord field* near *Stockholm.* It is not yet finiſhed, though for ſeveral years together, the congregation has kept up divine ſervice in it. Theſe *Germans* attended the *German* ſervice at the *Swediſh* church, whilſt the *Swediſh* miniſter Mr. *Dylander* lived.—But as the *Lutherans* got a clergyman for themſelves on the death of the laſt, thoſe of the reformed church made likewiſe preparations to get one from *Dordrecht*; and the firſt who was ſent to them, was the Rev. Mr. *Slaughter,* whom I found on my arrival. But in the year 1750, another clergyman of the reformed church arrived from *Holland,* and by his artful behaviour, ſo inſinuated himſelf into the favour of the Rev. Mr. *Slaughter*'s

Slaughter's congregation, that the latter loſt almoſt half his audience. The two clergymen then diſputed for ſeveral ſundays together, about the pulpit, nay, people relate that the new comer mounted the pulpit on a ſaturday, and ſtayed in it all night. The other being thus excluded, the two parties in the audience, made themſelves the ſubject both of the laughter and of the ſcorn of the whole town, by beating and bruiſing each other, and committing other exceſſes. The affair was inquired into by the magiſtrates, and decided in favour of the rev. Mr. *Slaughter*, the perſon who had been abuſed.

7. The *new reformed church*, was built at a little diſtance from the old one by the party of the clergyman, who had loſt his cauſe. This man however had influence enough to bring over to his party almoſt the whole audience of his antagoniſt, at the end of the year 1750, and therefore this new church will ſoon be uſeleſs.

8. 9. The *Quakers* have two meetings, one in the market, and the other in the northern part of the town. In them are according to the cuſtom of this people, neither altars, nor pulpits, nor any other ornaments uſual in churches; but only ſeats and ſome ſconces. They meet thrice every ſunday

ſunday in them, and beſides that at certain times every week or every month. I ſhall mention more about them hereafter.

10. THE *Baptiſts*, have their ſervice, in the northern part of the town.

11. THE *Roman Catholicks*, have in the ſouth-weſt part of the town a great houſe, which is well adorned within, and has an organ.

12. THE *Moravian Brethren*, have hired a great houſe, in the northern part of the town, in which they performed the ſervice both in *German* and in *Engliſh*; not only twice or three times every ſunday, but likewiſe every night after it was grown dark. But in the winter of the year 1750, they were obliged to drop their evening meetings; ſome wanton young fellows having ſeveral times diſturbed the congregation, by an inſtrument ſounding like the note of a cuckoo, for this noiſe they made in a dark corner, not only at the end of every ſtanza, but likewiſe at that of every line, whilſt they were ſinging a hymn.

THOSE of the *Engliſh* church, the New-lights, the Quakers, and the *Germans* of the reformed religion, have each of them their burying places on one ſide out of town, and not near their churches, though the firſt of theſe ſometimes make an exception. All the others bury their dead in their

their church-yards, and *Moravian brethren* bury where they can. The *Negroes* are buried in a particular place out of town.

I NOW proceed to mention the other publick buildings in *Philadelphia*.

THE *Town-hall*, or the place where the aſſemblies are held, is ſituated in the weſtern part of the town, it is a fine large building, having a tower with a bell in the middle, and is the greateſt ornament to the town. The deputies of each province meet in it commonly every *October*, or even more frequently if circumſtances require it, in order to conſider of the welfare of the country, and to hold their parliaments or diets in miniature. There they reviſe the old laws, and make new ones.

ON one ſide of this building ſtands the *Library*, which was firſt begun in the year 1742, on a publick ſpirited plan, formed and put in execution by the learned Mr. *Franklin*. For he perſuaded firſt the moſt ſubſtantial people in town to pay forty ſhillings at the outſet, and afterwards annually ten ſhillings, all in *Penſylvania* currency, towards purchaſing all kinds of uſeful books. The ſubſcribers are entitled to make uſe of the books. Other people are likewiſe at liberty to borrow them for a certain time, but muſt leave a pledge and pay

pay eight-pence a week for a folio volume, ſix-pence for a quarto, and four-pence for all others of a ſmaller ſize. As ſoon as the time, allowed a perſon for the peruſal of the volume, is elapſed, it muſt be returned, or he is fined. The money ariſing in this manner is employed for the ſalary of the librarian, and for purchaſing new books. There was already a fine collection of excellent works, moſt of them *Engliſh*; many *French* and *Latin*, but few in any other language. The ſubſcribers were ſo kind to me, as to order the librarian, during my ſtay here, to lend me every book, which I ſhould want, without requiring any payment of me. The library was open every ſaturday from four to eight o'clock in the afternoon. Beſides the books, ſeveral mathematical and phyſical inſtruments, and a large collection of natural curioſities were to be ſeen in it. Several little libraries were founded in the town on the ſame footing or nearly with this.

The *Court Houſe* ſtands in the middle of *Market ſtreet*, to the weſt of the market, it is a fine building, with a little tower in which there is a bell. Below and round about this building the market is properly kept every week.

The *building of the Academy*, is in the weſtern

weſtern part of the town. It was formerly as I have before mentioned, a meeting-houſe of the followers of *Whitefield*, but they ſold it in the year 1750, and it was deſtined to be the ſeat of an univerſity, or to expreſs myſelf in more exact terms, to be a college, it was therefore fitted up to this purpoſe. The youths are here only taught thoſe things which they learn in our common ſchools; but in time, ſuch lectures are intended to be read here, as are uſual in real univerſities.

At the cloſe of the laſt war, a *redoubt* was erected here, on the ſouth ſide of the town, near the river, to prevent the *French* and *Spaniſh* privateers from landing. But this was done after a very ſtrong debate. For the quakers oppoſed all fortifications, as contrary to the tenets of their religion, which allow not chriſtians to make war either offenſive or defenſive, but direct them to place their truſt in the Almighty alone. Several papers were then handed about for and againſt the opinion. But the enemy's privateers having taken ſeveral veſſels belonging to the town, in the river, many of the quakers, if not all of them, found it reaſonable to forward the building of the fortification as much as poſſible, at leaſt by a ſupply of money.

Of all the natural advantages of the town,

town, its temperate *climate* is the moſt conſiderable, the winter not being over ſevere, and its duration but ſhort, and the ſummer not too hot; the country round about bringing forth thoſe fruits in the greateſt plenty, which are raiſed by huſbandry. Their *September* and *October* are like the beginning of the *Swediſh Auguſt*. And the firſt days in their *February* are frequently as pleaſant, as the end of *April* and the beginning of *May* in *Sweden*. Even their coldeſt days in ſome winters have been no ſeverer, than the days at the end of autumn are in the middlemoſt parts of *Sweden*, and the ſouthern ones of *Finland*.

THE *good and clear water* in *Philadelphia*, is likewiſe one of its advantages. For though there are no fountains in the town, yet there is a *well* in every houſe, and ſeveral in the ſtreets, all which afford excellent water for boiling, drinking, waſhing, and other uſes. The water is commonly met with at the depth of forty feet. The water of the river *Delaware* is likewiſe good. But in making the wells, a fault is frequently committed, which in ſeveral places of the town ſpoils the water which is naturally good; I ſhall in the ſequel take an opportunity of ſpeaking further about it.

THE *Delaware* is exceeding convenient for

for trade. It is one of the greateſt rivers in the world: is three *Engliſh* miles broad at its mouth, two miles at the town of *Wilmington*, and three quarters of a mile at *Philadelphia*. This city lies within ninety or an hundred *Engliſh* miles from the ſea, or from the place where the river *Delaware* diſcharges itſelf into the bay of that name. Yet its depth is hardly ever leſs than five or ſix fathom. The greateſt ſhips therefore can ſail quite up to the town and anchor in good ground in five fathoms of water, on the ſide of the bridge. The water here has no longer a ſaltiſh taſte, and therefore all deſtructive worms, which have faſtened themſelves to the ſhips in the ſea, and have pierced holes into them, either die, or drop off, after the ſhip has been here for a while.

The only diſadvantage which trade labours under here, is the freezing of the river almoſt every winter for a month or more. For during that time the navigation is entirely ſtopped. But this does not happen at *Boſton*, *New York*, and other towns which are nearer the ſea.

The tide comes up to *Philadelphia*, and even goes thirty miles higher, to *Trenton*. The difference between high and low water is eight feet at *Philadelphia*.

The cataracts of the *Delaware* near *Trenton*,

Trenton, and of the *Skulkill* at ſome diſtance from *Philadelphia*, make theſe rivers uſeleſs further up the country, in regard to the conveyance of goods either from or to *Philadelphia*. Both muſt therefore be carried on waggons or carts. It has therefore already been thought of to make theſe two rivers navigable in time, at leaſt for large boats and ſmall veſſels.

SEVERAL ſhips are annually built of *American* oak, in the docks which are made in ſeveral parts of the town and about it, yet they can by no means be put in compariſon with thoſe built of *European* oak, in point of goodneſs and duration.

THE town carries on a great trade, both with the inhabitants of the country, and to other parts of the world, eſpecially to the *Weſt Indies*, *South America*, and the *Antilles*; to *England*, *Ireland*, *Portugal*, and to ſeveral *Engliſh* colonies in *North America*. Yet none but *Engliſh* ſhips are allowed to come into this port.

PHILADELPHIA reaps the greateſt profits from its trade to the *Weſt Indies*. For thither the inhabitants ſhip almoſt every day a quantity of flour, butter, fleſh and other victuals; timber, plank and the like. In return they receive either ſugar, molaſſes, rum, indigo, mahogany, and other goods,

or ready money. The true mahogany, which grows in *Jamaica*, is at preſent almoſt all cut down.

THEY ſend both *Weſt India* goods, and their own productions to *England*; the latter are all ſorts of woods, eſpecially black walnut, and oak planks for ſhips; ſhips ready built, iron, hides and tar. Yet this latter is properly bought in *New Jerſey*, the foreſts of which province are conſequently more ruined than any others. Ready money is likewiſe ſent over to *England*, from whence in return they get all ſorts of goods there manufactured, viz. fine and coarſe cloth, linen, iron ware, and other wrought metals, and *Eaſt India* goods. For it is to be obſerved that *England* ſupplies *Philadelphia* with almoſt all ſtuffs and manufactured goods which are wanted here.

A GREAT quantity of linſeed goes annually to *Ireland*, together with many of the ſhips which are built here. *Portugal* gets wheat, corn, flour and maize which is not ground. *Spain* ſometimes takes ſome corn. But all the money, which is got in theſe ſeveral countries, muſt immediately be ſent to *England*, in payment for the goods which are got from thence, and yet thoſe ſums are not ſufficient to pay all the debts.

BUT to ſhew more exactly, what the town and province have imported from

England

England, in different years, I ſhall here inſert an extract from the *Engliſh* cuſtom-houſe books, which I got from the engineer, *Lewis Evans*, at *Philadelphia*, and which will ſufficiently anſwer the purpoſe. This gentleman had deſired one of his friends in *London* to ſend him a compleat account of all the goods ſhipped from *England* to *Penſylvania* in ſeveral years. He got this account, and though the goods are not enumerated in it, yet their value in money is calculated. Such extracts from the cuſtom-houſe books have been made for every *North-American* province, in order to convince the *Engliſh* parliament, that thoſe provinces have taken greater quantities of the goods in that kingdom, ever ſince they have turned their money into bills.

I HAVE taken the copy from the original itſelf, and it is to be obſerved that it begins with the chriſtmas of the year 1722, and ends about the ſame time of the year 1747. In the firſt column is the value of the foreign goods, the duty for which has already been paid in *England*. The ſecond column ſhews the value of the goods manufactured in *England* and exported to *Penſylvania*. And in the laſt column theſe two ſums are added together, but at the bottom each of the columns is caſt up.

BUT this table does not include the goods which are annually ſhipped in great quantities to *Penſylvania* from *Scotland* and *Ireland*, among which is a great quantity of linen.

The Value of the Goods annually ſhipped from *England* to *Penſylvania*.

The Year, from one Chriſtmas to another.	Foreign Goods for which the duty has already been paid, & which therefore only req. receipts.			*Engliſh* manufactured Goods.			The Sums of theſe two preceding columns added together.		
	l.	*s.*	*d.*	*l.*	*s.*	*d.*	*l.*	*s.*	*d.*
1723	5199	13	5	10793	5	1	15992	19	4
1724	9373	15	8	20951	0	5	30324	16	1
1725	10301	12	6	31508	1	8	42209	14	2
1726	9371	11	6	28263	6	2	37634	17	8
1727	10243	0	7	21736	10	0	31979	10	7
1728	14073	13	3	23405	6	2	37478	19	11
1729	12948	8	5	16851	2	5	29799	10	10
1730	15660	10	11	32931	16	6	48592	7	5
1731	11838	17	4	32421	18	9	44260	16	1
1732	15240	14	4	26457	19	3	41698	13	7
1733	13187	0	8	27378	7	5	40585	8	1
1734	19648	15	9	34743	12	1	54392	7	10
1735	18078	4	3	30726	7	1	48804	11	4
1736	23456	15	11	38057	2	5	61513	18	4
1737	14517	4	3	42173	2	4	56690	6	7
1738	26320	19	3	41129	5	0	61450	4	3
1739	9041	4	5	45411	7	6	54452	11	11
1740	10280	2	0	46471	12	9	56751	14	9
1741	12977	18	10	78032	13	1	91010	11	11
1742	14458	6	3	60836	17	1	75295	3	4
1743	19220	1	6	60120	4	10	79340	6	4
1744	14681	8	4	47595	18	2	62214	6	6
1745	13043	8	8	41237	2	3	54280	10	11
1746	18103	12	7	55595	19	7	73699	12	2
1747	8585	14	11	73819	2	8	82404	17	7
Total.	343,789	16	0	969,049	1	6	1,312,838	17	6

THE

THE whole extent of the *Philadelphia* trade may be comprehended from the number of ſhips, which annually arrive at and ſail from this town. I intend to inſert here a table of a few years which I have taken from the gazettes of the town. The ſhips coming and going in one year, are to be reckoned from the twenty fifth of *March* of that year, to the twenty fifth of *March* of the next.

The Year.	Ships arrived.	Ships ſailed.
1735	199	212.
1740	307	208.
1741	292	309.
1744	229	271.
1745	280	301.
1746	273	293.

BUT it is much to be feared that the trade of *Philadelphia*, and of all the *Engliſh* colonies, will rather decreaſe than encreaſe, in caſe no proviſion is made to prevent it. I ſhall hereafter plainly ſhew upon what foundation this decreaſe of trade is likely to take place.

THE town not only furniſhes moſt of the inhabitants of *Penſylvania* with the goods which they want, but numbers of

the inhabitants of *New Jerſey* come every day and carry on a great trade.

THE town has two great fairs every year; one in *May*, and the other in *November*, both on the ſixteenth days of thoſe two months. But beſides theſe fairs, there are every week two market days, viz. *Wedneſday* and *Saturday*. On thoſe days the country people in *Penſylvania* and *New Jerſey*, bring to town a quantity of victuals, and other productions of the country, and this is a great advantage to the town. It is therefore to be wiſhed that the like regulation might be made in our *Swediſh* towns. You are ſure to meet with every produce of the ſeaſon, which the country affords, on the market-days. But on other days, they are in vain ſought for.

PROVISIONS are always to be got freſh here, and for that reaſon moſt of the inhabitants never buy more at a time, than what will be ſufficient till the next market-day. In ſummer there is a market almoſt every day; for the victuals do not keep well in the great heat. There are two places in the town where theſe markets are kept; but that near the court-houſe is the principal. It begins about four or five o'clock in the morning, and ends about nine o'clock in the forenoon.

THE

THE town is not encloſed, and has no other cuſtom-houſe than the great one for the ſhips.

THE governor of the whole province lives here; and though he is nominated by the heirs of *Pen*, yet he cannot take that office without being confirmed by the king of *England*.

THE quakers of almoſt all parts of *North-America*, have their great aſſembly here once a year.

IN the year 1743, a ſociety for the advancement of the ſciences was erected here. Its objects would have been the curioſities of the three kingdoms of nature, mathematicks, phyſick, chemiſtry, œconomy, and manufactures. But the war, which enſued immediately, ſtopped all deſigns of this nature, and ſince that time, nothing has been done towards eſtabliſhing any thing of this kind.

THE declination of the needle was here obſerved on the thirtieth of *October* 1750, old ſtyle, to be five deg. and forty-five min. weſt. It was examined by the new meridian, which was drawn at *Philadelphia* in the autumn of the ſame year, and extended a mile in length. By experience it appears, that this declination leſſens about a degree in twenty years time.

THE greateſt difference in the riſing and falling of the barometer, is according to the obſervations made for ſeveral years together by Mr. *James Logan*, found at 28″ 59 and 30″ 78.

HERE are three printers, and every week two *Engliſh*, and one *German* news-paper is printed.

IN the year 1732, on the fifth of *September*, old ſtyle, a little earthquake was felt here about noon, and at the ſame time at *Boſton* in *New England*, and at *Montreal* in *Canada*, which places are above ſixty *Swediſh* miles aſunder.

IN the month of *November* of the year 1737, the well known prince from mount *Lebanon*, *Sheich Sidi* came to *Philadelphia*, on his travels through moſt of the *Engliſh American* colonies. And in the ſame year a ſecond earthquake was felt about eleven o'clock at night, on the ſeventh of *December*. But it did not continue above half a minute, and yet, it was felt according to the accounts of the gazettes at the ſame hour in *Newcaſtle*, *New York*, *New London*, *Boſton*, and other towns of *New England*. It had therefore likewiſe reached ſeveral miles.

THE count *Sinzendorf** arrived here in

* Head of the Moravian Brethren. F.

the

the *December* of the year 1741, and continued till the next ſpring. His uncommon behaviour perſuaded many *Engliſhmen* of rank, that he was diſordered in his head.

I HAVE not been able to find the exact number of the inhabitants of *Philadelphia*. In the year 1746, they were reckoned above ten thouſand, and ſince that time their number is incredibly encreaſed. Neither can it be made out from the Bills of mortality, ſince they are not kept regularly in all the churches. I ſhall, however, mention ſome of thoſe which appeared either in the gazettes, or in bills printed on purpoſe.

Year.	Dead.	Year.	Dead.	Year.	Dead.
1730	227	1741	345	1745	420
1738	250	1742	409	1748	672
1739	350	1743	425	1749	758
1740	290	1744	410	1750	716

FROM theſe bills of mortality it alſo appears, that the diſeaſes which are the moſt fatal, are conſumptions, fevers, convulſions, pleureſies, hæmorrhagies, and dropſies.

THE number of thoſe that are born cannot be determined, ſince in many churches no order is obſerved with regard to this affair. The quakers, who are the moſt nume-

numerous in this town, never baptize their children, though they take a pretty exact account of all who are born among them.

It is likewiſe impoſſible to gueſs at the number of inhabitants from the dead, becauſe the town gets ſuch great ſupplies annually from other countries. In the ſummer of the year 1749, near twelve thouſand *Germans* came over to *Philadelphia*, many of whom ſtaid in that town. In the ſame year the houſes in *Philadelphia* were counted, and found to be two thouſand and ſeventy ſix in number.

The town is now quite filled with inhabitants, which in regard to their country, religion and trade, are very different from each other. You meet with excellent maſters in all trades, and many things are made here full as well as in *England*. Yet no manufactures, eſpecially for making fine cloth are eſtabliſhed. Perhaps the reaſon is, that it can be got with ſo little difficulty from *England*, and that the breed of ſheep which is brought over, degenerates in proceſs of time, and affords but a coarſe wool.

Here is great plenty of proviſions, and their prices are very moderate. There are no examples of an extraordinary dearth.

Every one who acknowledges God to be the Creator, preſerver and ruler of all things,

things, and teaches or undertakes nothing againſt the ſtate, or againſt the common peace, is at liberty to ſettle, ſtay, and carry on his trade here, be his religious principles ever ſo ſtrange. No one is here moleſted on account of the erroneous principles of the doctrine which he follows, if he does not exceed the above-mentioned bounds. And he is ſo well ſecured by the laws in his perſon and property, and enjoys ſuch liberties; that a citizen of *Philadelphia* may in a manner be ſaid to live in his houſe like a king.

On a careful conſideration of what I have already ſaid, it will be eaſy to conceive how this city ſhould riſe ſo ſuddenly from nothing, into ſuch grandeur and perfection, without ſuppoſing any powerful monarch's contributing to it, either by puniſhing the wicked, or by giving great ſupplies in money. And yet its fine appearance, good regulations, agreeable ſituation, natural advantages, trade, riches and power, are by no means inferior to thoſe of any, even of the moſt ancient towns in *Europe*. It has not been neceſſary to force people to come and ſettle here; on the contrary foreigners of different languages, have left their country, houſes, property and relations, and ventured over wide and ſtormy ſeas, in order

to

to come hither. Other countries, which have been peopled for a long ſpace of time, complain of the ſmall number of their inhabitants. But *Penſylvania*, which was no better than a deſart in the year 1681, and hardly contained five hundred people, now vies with ſeveral kingdoms in *Europe*, in number of inhabitants. It has received numbers of people which other countries, to their infinite loſs, have either neglected or expelled.

A WRETCHED old wooden building, on a hill near the river ſomewhat north of the *Wickako church*, belonging to one of the *Sons of Sven*, of whom, as before-mentioned, the ground was bought for building *Philadelphia* upon, is preſerved on purpoſe, as a memorial of the poor ſtate of that place, before the town was built on it. Its antiquity gives it a kind of ſuperiority over all the other buildings in town, though in itſelf the worſt of all. This hut was inhabited, whilſt as yet ſtags, deers, elks, and beavers, at broad day light lived in the future ſtreets, church-yards, and market-places of *Philadelphia*. The noiſe of a ſpinning wheel was heard in this houſe, before the manufactures now eſtabliſhed were thought of, or *Philadelphia* built. But with all theſe advantages, this houſe is ready to fall

fall down, and in a few years to come, it will be as difficult to find the place where it ſtood, as it was unlikely at the time of its erection, that one of the greateſt towns in *America*, ſhould in a ſhort time ſtand cloſe up to it.

September the 7th. Mr. *Peter Cock*, a merchant of this town, aſſured me that he had laſt week himſelf been a ſpectator of a ſnake's ſwallowing a little bird. This bird, which from its cry has the name of *Cat bird*, (*Muſcicapa Carolinenſis*, *Linn.*) flew from one branch of a tree to another, and was making a doleful tune. At the bottom of the tree, but at a fathom's diſtance from the ſtem, lay one of the great black ſnakes, with its head continually upright, pointing towards the bird, which was always fluttering about, and now and then ſettling on the branches. At firſt it only kept in the topmoſt branches, but by degrees it came lower down, and even flew upon the ground, and hopped to the place where the ſnake lay, which immediately opened its mouth, caught the bird and ſwallowed it; but it had ſcarce finiſhed its repaſt before Mr. *Cock* came up and killed it. I was afterwards told that this kind of ſnakes was frequently obſerved to purſue little birds in this manner. It is already well

well known that the rattle ſnake does the ſame.

I WALKED out to day into the fields in order to get more acquainted with the plants hereabouts, I found ſeveral *European* and even *Swediſh* plants among them. But thoſe which are peculiar to *America*, are much more numerous

THE *Virginian maple* grows in plenty on the ſhores of the *Delaware*. The *Engliſh* in this country call it either *Buttonwood*, or *Waterbeech*, which latter name is moſt uſual. The *Swedes* call it *Wattenbok*, or *Waſbok*. It is *Linnæus*'s *Platanus occidentalis*. See *Cateſby*'s Nat. Hiſt. of *Carolina*, vol. 1. p. 56. t. 56. It grows for the greateſt part in low places, but eſpecially on the edge of rivers and brooks. But theſe trees are eaſily tranſplanted to more dry places, if they be only filled with good ſoil; and as their leaves are large and their foliage thick, they are planted about the houſes and in gardens, to afford a pleaſant ſhade in the hot ſeaſon, to the enjoyment of which ſome ſeats were placed under them. Some of the *Swedes* had boxes, pails, and the like, made of the bark of this tree by the native *Americans*. They ſay that thoſe people whilſt they were yet ſettled here, made little diſhes of this bark for gathering whort-

whortleberries. The bark was a line in thickneſs. This tree likewiſe grows in marſhes, or in ſwampy fields, where aſh and red maple commonly grow. They are frequently as tall and thick, as the beſt of our fir trees. The ſeed ſtays on them till ſpring, but in the middle of *April* the pods open and ſhed the ſeeds. Query, Whether they are not ripe before that time, and conſequently ſooner fit for ſowing? This *American* maple is remarkable for its quick growth, in which it exceeds all other trees. There are ſuch numbers of them on the low meadows between *Philadelphia* and the ferry at *Glouceſter*, on both ſides of the road, that in ſummer time you go as it were through a ſhady walk. In that part of *Philadelphia* which is near the *Swediſh* church, ſome great trees of this kind ſtand on the ſhore of the river. In the year 1750, on the 15th. of *May* I ſaw the buds ſtill on them, and in the year 1749 they began to flower on the eighth of that month. Several trees of this ſort are planted at *Chelſea* near *London*, and they now in point of height vie with the talleſt oak.

September the 18th. In the morning I went with the *Swediſh* painter, Mr. *Heſſelius*, to the country ſeat of Mr. *Bartram*, which is about four *Engliſh* miles to the ſouth

ſouth of *Philadelphia*, at ſome diſtance from the high road to *Maryland*, *Virginia*, and *Carolina*. I had therefore the firſt opportunity here, of getting an exact knowledge of the ſtate of the country, which was a plain covered with all kinds of trees with deciduous leaves. The ground was ſandy, mixed with clay. But the ſand ſeemed to be in greater quantity. In ſome parts the wood was cut down, and we ſaw the habitations of ſome country people, whoſe corn-fields and plantations were round their farm-houſes. The wood was full of mulberry-trees, walnut-trees of ſeveral kinds, cheſnut-trees, ſaſſafras, and the like. Several ſorts of wild vines claſped their tendrils round, and climbed up to the ſummits of the higheſt trees; and in other places they twined round the encloſures, ſo thick, that the latter almoſt ſunk down under their weight. The *Perſimon*, or *Dioſpyros Virginiana*, *Linn.* ſp. pl. p. 1510, grew in the marſhy fields, and about ſprings. Its little apples looked very well already, but are not fit for eating, before the froſt has affected them, and then they have a very fine taſte. *Heſſelius* gathered ſome of them, and deſired my ſervant to taſte of the fruits of the land; but this poor credulous fellow, had hardly bit into them, when he felt the qualities

qualities they have before the froſt has penetrated them. For they contracted his mouth ſo that he could hardly ſpeak, and had a very diſagreeable taſte. This diſguſted him ſo much that he was with difficulty perſuaded to taſte of it during the whole of our ſtay in *America*, notwithſtanding it loſes all its acidity and acquires an agreeable flavour in autumn and towards the beginning of winter. For the fellow always imagined, that though he ſhould eat them ever ſo late in the year, they would ſtill retain the ſame diſagreeable taſte.

To ſatisfy the curioſity of thoſe, who are willing to know, how the woods look in this country, and whether or no the trees in them are the ſame with thoſe found in our foreſts, I here inſert a ſmall catalogue of thoſe which grow ſpontaneouſly in the woods which are neareſt to *Philadelphia*. But I exclude ſuch ſhrubs as do not attain any conſiderable height. I ſhall put that tree firſt in order, which is moſt plentiful, and ſo on with the reſt, and therefore trees which I have found but ſingle, though near the town, will be laſt.

1. *Quercus alba*, the white oak in good ground.

2. *Quercus rubra*, or the black oak.

3. *Quercus hiſpanica*, the *Spaniſh* oak, a variety of the preceding.

4. *Juglans alba*, hiccory, a kind of walnut tree, of which three or four varieties are to be met with.

5. *Rubus occidentalis*, or *American* blackberry ſhrub.

6. *Acer rubrum*, the maple tree with red flowers, in ſwamps.

7. *Rhus glabra*, the ſmooth leaved Sumach, in the woods, on high glades, and old corn-fields.

8. *Vitis labruſca* and *Vulpina*, vines of ſeveral kinds.

9. *Sambucus canadenſis*, *American* Elder tree, along the hedges and on glades.

10. *Quercus phellos*, the ſwamp oak, in moraſſes.

11. *Azalea lutea*, the *American* upright honey-ſuckle, in the woods in dry places.

12. *Cratægus Crus galli*, the *Virginian* Azarole, in woods.

13. *Vaccinium* -------, a ſpecies of whortleberry ſhrub.

14. *Quercus prinus*, the cheſnut oak in good ground.

15. *Cornus florida*, the cornelian cherry, in all kinds of ground.

16. *Liriodendron Tulipifera*, the tulip tree, in

in every kind of ſoil.

17. *Prunus virginiana*, the wild cherry tree.

18. *Vaccinium* -------, a frutex whortleberry, in good ground.

19. *Prinos verticillatus*, the winterberry tree in ſwamps.

20. *Platanus occidentalis*, the water-beech.

21. *Nyſſa aquatica*, the tupelo tree; on fields and mountains.*

22. *Liquidambar ſtyraciflua*, ſweet gum tree, near ſprings.

23. *Betula Alnus*, alder, a variety of the *Swediſh*; it was here but a ſhrub.

24. *Fagus caſtanea*, the cheſnut tree, on corn-fields, paſtures, and in little woods.

25. *Juglans nigra*, the black walnut tree, in the ſame place with the preceding tree.

26. *Rhus radicans*, the twining ſumach, climbed along the trees.

27. *Acer Negundo*, the aſh-leaved maple, in moraſſes and ſwampy places.

28. *Prunus domeſtica*, the wild plumb tree.

29. *Ulmus Americana*, the white elm.

* Dr. *Linnæus* mentions only one ſpecies of *Nyſſa*, namely *Nyſſa aquatica*; Mr. *Kalm* does not mention the name of the ſpecies; but if his is not a different ſpecies, it muſt at leaſt be a variety, ſince he ſays it grows on hills, whereas the *aquatica* grows in the water. F.

30. *Prunus ſpinoſa*, ſloe ſhrub, in low places.

31. *Laurus ſaſſafras*, the ſaſſafras tree, in a looſe ſoil mixed with ſand.

32. *Ribes nigrum*, the currant tree, grew in low places and in marſhes.

33. *Fraxinus excelſior*, the aſh tree in low places.

34. *Smilax laurifolia*, the rough bind weed with the bay leaf, in woods and on pales or encloſures.

35. *Kalmia latifolia*, the *American* dwarf laurel, on the northern ſide of mountains.

36. *Morus rubra*, the mulberry tree on fields, hills and near the houſes.

37. *Rhus vernix*, the poiſonous Sumach, in wet places.

38. *Quercus rubra*, the red oak, but a peculiar variety.

39. *Hamamelis virginica*, the witch hazel.

40. *Dioſpyros virginiana*, the perſimon.

41. *Pyrus coronaria*, the anchor tree.

42. *Juniperus virginiana*, the red juniper, in a dry poor ſoil.

43. *Laurus æſtivalis*, ſpice-wood in a wet ſoil.

44. *Carpinus oſtrya*, a ſpecies of horn beam in a good ſoil.

45. *Carpinus betulus*, a horn beam, in the ſame kind of ſoil with the former.

46. *Fagus*

46. *Fagus ſylvatica*, the beech, likewiſe in good ſoil.

47. *Juglans* ------, a ſpecies of walnut tree on hills near rivers,* called by the *Swedes Butternuſtræ*.

48. *Pinus Americana, Penſylvanian* fir tree; on the north ſide of mountains, and in vallies. †

49. *Betula lenta*, a ſpecies of birch, on the banks of rivers.

50. *Cephalantus occidentalis*, button wood, in wet places.

51. *Pinus tæda*, the *New Jerſey* fir tree, on dry ſandy heaths.

52. *Cercis canadenſis*, the ſallad tree, in a good ſoil.

53. *Robinia pſeudacacia*, the locuſt tree, on the corn-fields.

54. *Magnolia glauca*, the laurel-leaved tulip tree, in marſhy ſoil.

55. *Tilia Americana*, the lime tree, in a good ſoil.

56. *Gleditſia triacanthos*, the honey locuſt tree, or three thorned acacia, in the ſame ſoil.

57. *Celtis occidentalis*, the nettle tree, in the fields.

58. *Annona muricata*, the cuſtard apple in a fruitful ſoil.

* Quere. Is this the *Juglans baccata* of *Linnæus?* F.

† This ſpecies is not to be met with in *Linn. ſpec. plant.* F.

We viſited ſeveral *Swedes*, who were ſettled here, and were at preſent in very good circumſtances. One of them was called *Andrew Rambo*; he had a fine houſe built of ſtone, two ſtories high, and a great orchard near it. We were every where well received, and ſtayed over night with the above-mentioned countryman. We ſaw no other marks of autumn, than that ſeveral fruits of this ſeaſon were already ripe. For beſides this all the trees were yet as green, and the ground ſtill as much covered with flowers, as in our ſummer. Thouſands of frogs croaked all the night long in the marſhes and brooks. The locuſts and graſshoppers made likewiſe ſuch a great noiſe, that it was hardly poſſible for one perſon to underſtand another. The trees too, were full of all ſorts of birds, which by the variety of their fine plumage, delighted the eye, while the infinite variety of their tunes were continually re-echoed.

The orchards, along which we paſſed today, were only encloſed by hurdles. But they contained all kinds of fine fruit. We wondered at firſt very much when our leader leaped over the hedge into the orchards, and gathered ſome agreeable fruit for us. But our aſtoniſhment was ſtill greater, when we ſaw that the people in the garden were

ſo

ſo little concerned at it, as not even to look at us. But our companion told us, that the people here were not ſo exact in regard to a few fruits, as they are in other countries where the ſoil is not ſo fruitful in them. We afterwards found very frequently that the country people in *Sweden* and *Finland* guarded their turneps more carefully, than the people here do the moſt exquiſite fruits.

September the 19th. As I walked this morning into the fields, I obſerved that a copious dew was fallen; for the graſs was as wet as if it had rained. The leaves of the plants and trees, had contracted ſo much moiſture, that the drops ran down. I found on this occaſion that the dew was not only on the ſuperior, but likewiſe on the inferior ſide of the leaves. I therefore carefully conſidered many leaves both of trees and of other plants; both of thoſe which are more above, and of thoſe which are nearer to the ground. But I found in all of them, that both ſides of the leaves were equally bedewed, except thoſe of the *Verbaſcum Thapſus*, or *great Mullein*, which though their ſuperior ſide was pretty well covered with the dew, yet their inferior had but a little.

EVERY countryman, even a common peaſant, has commonly an orchard near

his houſe, in which all ſorts of fruit, ſuch as peaches, apples, pears, cherries, and others, are in plenty. The peaches were now almoſt ripe. They are rare in *Europe*, particularly in *Sweden*, for in that country hardly any people beſides the rich taſte them. But here every countryman had an orchard full of peach trees, which were covered with ſuch quantities of fruit, that we could ſcarcely walk in the orchard, without treading upon thoſe peaches which were fallen off; many of which were always left on the ground, and only part of them was ſold in town, and the reſt was conſumed by the family and ſtrangers; for every one that paſſed by, was at liberty to go into the orchard, and to gather as many of them as he wanted. Nay, this fine fruit was frequently given to the ſwine.

This fruit is however ſometimes kept for winter uſe, and for this purpoſe they are prepared in the following manner. The fruit is cut into four parts, the ſtone thrown away, and the fruit put upon a thread, on which they are expoſed to the ſunſhine in the open air, till they are ſufficiently dry. They are then put into a veſſel for winter. But this manner of drying them is not very good, becauſe the rain of this ſeaſon very eaſily ſpoils and putrifies them,

them, whilſt they hang in the open air. For this reaſon a different method is followed by others, which is by far the moſt eligible. The peaches are as before cut into four parts, are then either put upon a thread, or laid upon a board, and ſo hung up in the air when the ſun ſhines. Being dried in ſome meaſure, or having loſt their juice by this means, they are put into an oven, out of which the bread has but juſt been taken, and are left in it for a while. But they are ſoon taken out and brought into the freſh air; and after that they are again put into the oven, and this is repeated ſeveral times till they are as dry as they ought to be. For if they were dried up at once in the oven, they would ſhrivel up too much, and loſe part of their flavour. They are then put up and kept for the winter. They are either baked into tarts and pyes, or boiled and prepared as dried apples and pears are in *Sweden*. Several people here dry and preſerve their apples in the ſame manner as their peaches.

The peach trees, have, as I am told, been firſt planted here by the *Europeans*. But at preſent they ſucceed very well, and require even leſs care, than our apple and pear trees.

The orchards have ſeldom other fruit than

than apples and peaches. Pear trees are ſcarce in this province, and thoſe that had any of them, had planted them in their orchards. They likewiſe have cherry trees in the orchards, but commonly on the ſides of them towards the houſe, or along the encloſures. Mulberry trees are planted on ſome hillocks near the houſe, and ſometimes even in the court yards of the houſe. The black walnut trees, or *Juglans nigra*, grow partly on hills, and in fields near the farm-houſes, and partly along the encloſures; but moſt commonly in the foreſts. No other trees of this kind, are made uſe of here. The cheſnuts are left in the fields; here and there is one in a dry field or in a wood.

The *Hibiſcus eſculentus*, or *Okra*,* is a plant which grows wild in the *Weſt Indies*, but is planted in the gardens here. The fruit, which is a long pod, is cut whilſt it is green, and boiled in ſoups, which thereby become as thick as pulſe. This diſh is reckoned a dainty by ſome people, and eſpecially by the negroes.

Capsicum *annuum*, or *Guinea pepper* is likewiſe planted in gardens. When the fruit

* In *Miller*'s Garden. Dictionary, it is called *Ketmia Indica folio ficus, fructu pentagono, recurvo eſculento, graciliori, et longiori.*

fruit is ripe it is almoſt entirely red, it is put to a roaſted or boiled piece of meat, a little of it being ſtrewed upon it, or mixed with the broth. Beſides this, cucumbers are pickled with it. Or the pods are pounded whilſt they are yet tender, and being mixed with ſalt are preſerved in a bottle; and this ſpice is ſtrewed over roaſted or boiled meat, or fried fiſh, and gives them a very fine taſte. But the fruit by itſelf is as biting as common pepper.

This country contains many ſpecies of the plant, which Dr. *Linnæus* calls *Rhus*, and the moſt common is the *Rhus foliis pinnatis ſerratis lanceolates retrinque nudis*, or the *Rhus glabra*. The *Engliſh* call this plant *Sumach*. But the *Swedes* here, have no particular name for it, and therefore make uſe of the *Engliſh* name. Its berries or fruits are red. They are made uſe of for dying, and afford a colour like their own. This tree is like a weed in this country, for if a corn-field is left uncultivated for ſome few years together, it grows on it in plenty, ſince the berries are ſpread every where by the birds. And when the ground is to be ploughed the roots ſtop the plough very much. The fruit ſtays on the ſhrub during the whole winter. But the leaves drop very early in autumn, after they are turned

turned reddiſh, like thoſe of our *Swediſh* mountain aſh. The branches boiled with the berries afford a black ink like tincture. The boys eat the berries, there being no danger of falling ſick after the repaſt; but they are very ſour. They ſeldom grow above three yards high. On cutting the ſtem, it appears that it contains nothing but pith. I have cut ſeveral in this manner, and found that ſome were ten years old; but that moſt of them were above one year old. When the cut is made, a yellow juice comes out between the bark and the wood. One or two of the moſt outward circles are white, but the innermoſt are of a yellowiſh green. It is eaſy to diſtinguiſh them one from another. They contain a very plentiful pith, the diameter of which is frequently half an inch, and ſometimes more. It is brown, and ſo looſe that it is eaſily puſhed out by a little ſtick, in the ſame manner as the pith of the elder tree, raſpberry and blackberry buſhes. This ſumach grows near the encloſures, round the corn-fields, but eſpecially on fallow ground. The wood ſeemed to burn well, and made no great crackling in the fire.

September the 20th. In the morning we walked in the fields and woods near the town,

town, partly for gathering ſeeds, and partly for gathering plants for my herbal, which was our principal occupation; and in the autumn of this year, we ſent part of our collection to *England* and *Sweden*.

A SPECIES of *Rhus*, which was frequent in the marſhes here was called the *poiſon tree* by both *Engliſh* and *Swedes*. Some of the former gave it the name of *ſwamp-ſumach*, and my country-men gave it the ſame name. Dr. *Linnæus* in his botanical works calls it *Rhus Vernix*. Sp. pl. 1. 380. *Flora Virgin*. 45. An inciſion being made into the tree, a whitiſh yellow juice, which has a nauſeous ſmell, comes out between the bark and the wood. This tree is not known for its good qualities, but greatly ſo for the effect of its poiſon, which though it is noxious to ſome people, yet does not in the leaſt affect others. And therefore one perſon can handle the tree as he pleaſes, cut it, peel off its bark, rub it, or the wood upon his hands, ſmell at it, ſpread the juice upon his ſkin, and make more experiments, with no inconvenience to himſelf; another perſon on the contrary dares not meddle with the tree, while its wood is freſh, nor can he venture to touch a hand which has handled it, nor even to expoſe himſelf to the ſmoak of a fire which is made with this wood, without ſoon feeling

feeling its bad effects; for the face, the hands, and frequently the whole body ſwells exceſſively, and is affected with a very accute pain. Sometimes bladders or bliſters ariſe in great plenty, and make the ſick perſon look as if he was infected by a leproſy. In ſome people the external thin ſkin, or cuticle, peels of in a few days, as is the caſe when a perſon has ſcalded or burnt any part of his body. Nay, the nature of ſome perſons will not even allow them to approach the place where the tree grows, or to expoſe themſelves to the wind, when it carries the effluvia or exhalations of this tree with it, without letting them feel the inconvenience of the ſwelling, which I have juſt now deſcribed. Their eyes are ſometimes ſhut up for one, or two and more days together by the ſwelling. I know two brothers, one of whom could without danger handle this tree in what manner he pleaſed, whereas the other could not come near it without ſwelling. A perſon ſometimes does not know that he has touched this poiſonous plant, or that he has been near it, before his face and hands ſhews it by their ſwelling. I have known old people who were more afraid of this tree than of a viper; and I was acquainted with a perſon who merely by the noxious exhalations of it

was

was ſwelled to ſuch a degree, that he was as ſtiff as a log of wood, and could only be turned about in ſheets.

On relating in the winter of the year 1750, the poiſonous qualites of the ſwamp ſumach to my *Yungſtræm*, who attended me on my travels, he only laughed, and looked upon the whole as a fable, in which opinion he was confirmed by his having often handled the tree the autumn before, cut many branches of it, which he had carried for a good while in his hand in order to preſerve its ſeeds, and put many into the herbals, and all this, without feeling the leaſt inconvenience. He would therefore, being a kind of philoſopher in his own way, take nothing for granted of which he had no ſufficient proofs, eſpecially as he had his own experience in the ſummer of the year 1749, to ſupport the contrary opinion. But in the next ſummer his ſyſtem of philoſophy was overturned. For his hands ſwelled and he felt a violent pain, and itching in his eyes as ſoon as he touched the tree, and this inconvenience not only attended him when he meddled with this kind of ſumach, but even when he had any thing to do with the *Rhus radicans*, or that ſpecies of ſumach which climbs along the trees, and is not by far ſo

poiſonous

poiſonous as the former. By this adventure he was ſo convinced of the power of the poiſon tree, that I could not eaſily perſuade him to gather more ſeeds of it for me. But he not only felt the noxious effects of it in ſummer when he was very hot, but even in winter when both he and the wood were cold. Hence it appears that though a perſon be ſecured againſt the power of this poiſon for ſome time, yet that in length of time he may be affected with it as well, as people of a weaker conſtitution.

I HAVE likewiſe tried experiments of every kind with the poiſon tree on myſelf. I have ſpread its juice upon my hands, cut and broke its branches, peeled off its bark, and rubbed my hands with it, ſmelt at it, carried pieces of it in my bare hands, and repeated all this frequently, without feeling the baneful effects ſo commonly annexed to it; but I however once experienced that the poiſon of the ſumach was not entirely without effect upon me. On a hot day in ſummer, as I was in ſome degree of perſpiration, I cut a branch of the tree, and carried it in my hand for about half an hour together, and ſmelt at it now and then. I felt no effects from it, till in the evening. But next morning I awoke with a violent itching of my eye-lids, and the parts

parts thereabouts, and this was ſo painful, that I could hardly keep my hands from it. It ceaſed after I had waſhed my eyes for a while, with very cold water. But my eye-lids were very ſtiff all that day. At night the itching returned, and in the morning as I awoke, I felt it as ill as the morning before, and I uſed the ſame remedy againſt it. However it continued almoſt for a whole week together, and my eyes were very red, and my eye-lids were with difficulty moved, during all that time. My pain ceaſed entirely afterwards. About the ſame time, I had ſpread the juice of the tree very thick upon my hand. Three days after they occaſioned bliſters, which ſoon went off without affecting me much. I have not experienced any thing more of the effects of this plant, nor had I any deſire ſo to do. However I found that it could not exert its power upon me, when I was not perſpiring.

I HAVE never heard that the poiſon of this Sumach has been mortal; but the pain ceaſes after a few days duration. The natives formerly made their flutes of this tree, becauſe it has a great deal of pith. Some people aſſured me, that a perſon ſuffering from its noiſome exhalations, would eaſily recover by ſpreading a mixture of the wood,

burnt to charcoal, and hog's lard, upon the ſwelled parts. Some aſſerted that they had really tried this remedy. In ſome places this tree is rooted out on purpoſe, that its poiſon may not affect the workmen.

I RECEIVED to day, ſeveral curioſities belonging to the mineral kingdom, which were collected in the country. The following were thoſe which were moſt worth attention. The firſt was a white, and quite tranſparent cryſtal.* Many of this kind are found in *Penſylvania*, in ſeveral kinds of ſtone, eſpecially in a pale-grey limeſtone. The pieces are of the thickneſs and length of the little finger, and commonly as tranſparent as poſſible. But I have likewiſe got cryſtals here, of the length of a foot, and of the thickneſs of a middle-ſized man's leg. They were not ſo tranſparent as the former.

THE *cubic Pyrites of Biſhop Browallius*,† was of a very regular texture. But its cubes were different in ſize, for in ſome of the

* *Nitrum Cryſtallus montana, Linn.* Syſt. nat. 3. p. 84. *Cryſtallus hexagona pellucida non Colorata. Wallerius*'s Mineralogy, p. 100. *Cryſtallus montana*, colourleſs cryſtal. *Forſter*'s Introd. to Mineralogy, p. 13.

† *Pyrites cryſtallinus, Linn.* Syſt. nat. 3. p. 113. *Marchaſitæ hexaëdricæ teſſelares. Wallerius*'s Mineralogy, p. 211. *Marcaſitæ, vel cryſtalli pyritacei*, Marcaſites. *Forſter*'s Introd. to Mineralogy, p. 39.

the cubes, the planes of the ſides only amounted to a quarter of an inch, but in the biggeſt cubes, they were full two inches. Some were exceedingly glittering, ſo that it was very eaſy to be perceived that they conſiſted of ſulphureous pyrites. But in ſome one or two ſides only, glittered ſo well, and the others were dark-brown. Yet moſt of theſe marcaſites had this ſame colour on all the ſides. On breaking them they ſhewed the pure pyrites. They are found near *Lancaſter* in this province, and ſometimes lie quite above the ground; but commonly they are found at the depth of eight feet or more from the ſurface of the ground, on digging wells and the like. Mr. *Heſſelius* had ſeveral pieces of this kind of ſtone, which he made uſe of in his work. He firſt burnt them, then pounded or ground them to a powder, and at laſt rubbed them ſtill finer in the uſual way, and this afforded him a fine reddiſh-brown colour.

Few *black pebbles* are found in this province, which on the other hand yields many kinds of *marble*, eſpecially a *white one, with pale-grey bluiſh ſpots*, which is found in a quarry at the diſtance of a few *Engliſh* miles from *Philadelphia*, and is very good

for working, though it is not one of the fineſt kind of marbles. They make many tombſtones and tables, enchaſe chimneys and doors, floors of marble flags in the rooms, and the like of this kind of marble. A quantity of this commodity is ſhipped to different parts of *America*.

Muscovy *glaſs*,* is found in many places hereabouts, and ſome pieces of it are pretty large, and as fine as thoſe which are brought from *Ruſſia*. I have ſeen ſome of them, which were a foot and more in length. And I have ſeveral in my collection that are nearly nine inches ſquare. The *Swedes* on their firſt arrival here made their windows of this native glaſs.

A pale grey fine limeſtone,† of a compact texture, lies in many places hereabouts, and affords a fine lime. Some pieces of it are ſo full of fine tranſparent cryſtals, that almoſt half of the ſtone conſiſts of nothing elſe. But beſides this limeſtone, they make lime

* *Mica membranacea*, *Linn.* Syſt. nat. 3. p. 58.
Mica membranacea pellucidiſſima flexilis alba. *Wallerius*'s Min. p. 120.
Ruſſian glaſs, *Muſcovy* glaſs, Iſinglaſs, *Vitrum ruthenicum*, *Vitrum Mariæ*. *Forſter*'s Introd. to Mineralogy, p. 18.

† *Marmor rude*, *Linn.* Syſt. nat. 3. p. 41.
Calcareus particulis ſcintillantibus. *Wall.* Min. p. 39.
Calcareus ſcintillans, glittering limeſtone. *Forſter*'s Introd. to Mineral. p. 9.

lime near the ſea-ſhore, from oyſter ſhells, and bring it to town in winter, which is ſaid to be worſe for maſonry, but better for white-waſhing, than that which is got from the limeſtone.

Coals have not yet been found in *Penſylvania*; but people pretend to have ſeen them higher up in the country among the natives. Many people however agree that they are met with in great quantity more to the north, near *Cape Breton*.*

The ladies make wine from ſome of the fruits of the land. They principally take white and red currants for that purpoſe, ſince the ſhrubs of this kind are very plentiful in the gardens, and ſucceed very well. An old ſailor who had frequently been in *New-foundland*, told me that red currants grew wild in that country in great quantity. They likewiſe make a wine of ſtrawberries, which grow in great plenty in the woods, but are ſourer than the *Swediſh* ones. The *American blackberries*, or *Rubus occidentalis*, are likewiſe made uſe of for this purpoſe, for they grow every where about the fields, almoſt as abundantly as

 thiſtles

* This has been confirmed, ſince *Cape Breton* is in the hands of the *Engliſh*, and it is reported that the ſtrata of coals run through the whole iſle, and ſome baſſet out to day near the ſea-ſhore, ſo that this iſle will afford immenſe treaſures of coals, when the government will find it convenient, to have them dug for the benefit of the Nation. F.

thiſtles in *Sweden*, and have a very agreeable taſte. In *Maryland* a wine is made of the wild grapes, which grow in the woods of that province. Raſpberries and cherries which are planted on purpoſe, and taken great care of, likewiſe afford a very fine wine. It is unneceſſary to give an account of the manner of making the currant wine, for in *Sweden* this art is in higher perfection than in *North America*.

September the 21ſt. THE *common Privet*, or *Ligustrum vulgare*, *Linn.* grows among the buſhes in thickets and woods. But I cannot determine whether it belongs to the indigenous plants, or to thoſe which the *Engliſh* have introduced, the fruits of which the birds may have diſperſed every where. The encloſures and pales are generally made here of wooden planks and poſts. But a few good œconomiſts, having already thought of ſparing the woods for future times, have begun to plant quick hedges round their fields; and to this purpoſe they take the above-mentioned privet, which they plant in a little bank, which is thrown up for it. The ſoil every where hereabouts is a clay mixed with ſand, and of courſe very looſe. The privet hedges however, are only adapted to the tameneſs of the cattle and other animals here; for the hogs

all

all have a triangular yoke about their necks, and the other cattle are not very unruly. But in ſuch places where the cattle break through the encloſures, hedges of this kind would make but a poor defence. The people who live in the neighbourhood of *Philadelphia*, are obliged to keep their hogs encloſed.

In the afternoon I rode with Mr. *Peter Cock*, who was a merchant, born at *Karlſcron* in *Sweden*, to his country ſeat, about nine miles from the town, to the north-weſt.

The country on both ſides of the road was covered with a great foreſt. The trees were all with annual leaves, and I did not ſee a ſingle fir or pine. Moſt of the trees were different ſorts of oak. But we likewiſe ſaw cheſnut trees, walnut trees, locuſt trees, apple trees, hiccory, blackberry buſhes, and the like. The ground ceaſed to be ſo even as it was before, and began to look more like the *Engliſh* ground, diverſified with hills and vallies. We found neither mountains nor great ſtones, and the wood was ſo much thinned, and the ground ſo uniformly even, that we could ſee a great way between the trees, under which we rode without any inconvenience; for there were no buſhes to ſtop us. In ſome places

where the ſoil was thrown up, we ſaw ſome little ſtones of that kind of which the houſes here are ſo generally built. I intend to deſcribe them in the ſequel.

As we went on in the wood, we continually ſaw at moderate diſtances little fields, which had been cleared of the wood. Each of theſe was a farm. Theſe farms were commonly very pretty, and a walk of trees frequently led from them to the high-road. The houſes were all built of brick, or of the ſtone which is here every where to be met with. Every countryman, even though he were the pooreſt peaſant, had an orchard with apples, peaches, cheſnuts, walnuts, cherries, quinces, and ſuch fruits, and ſometimes we ſaw the vines climbing along them. The vallies were frequently provided with little brooks which contained a cryſtal ſtream. The corn on the ſides of the road, was almoſt all mown, and no other grain beſides maize and buckwheat was ſtanding. The former was to be met with near each farm, in greater or leſſer quantities; it grew very well and to a great length, the ſtalks being from ſix to ten foot high, and covered with fine green leaves. Buckwheat likewiſe was not very uncommon, and in ſome places the people were beginning to reap it. I intend in the ſequel

quel to be more particular about the qualities and uſe of theſe kinds of corn.

AFTER a ride of ſix *Engliſh* miles, we came to *Germantown*; this town has only one ſtreet, but is near two *Engliſh* miles long. It is for the greateſt part inhabited by *Germans*, who from time to time come from their country to *North America*, and ſettle here, becauſe they enjoy ſuch privileges, as they are not poſſeſſed of any where elſe. Moſt of the inhabitants are tradeſmen, and make almoſt every thing in ſuch quantity and perfection, that in a ſhort time this province will want very little from *England*, its mother country. Moſt of the houſes were built of the ſtone which is mixed with glimmer, and found every where towards *Philadelphia*, but is more ſcarce further on. Several houſes however were made of brick. They were commonly two ſtories high, and ſometimes higher. The roofs conſiſted of ſhingles of the white cedar wood. Their ſhape reſembled that of the roofs in *Sweden*, but the angles they formed at the top were either obtuſe, right angled, or acute, according as the ſlopes were ſteep or eaſy. They ſometimes formed either the half of an octogon, or the half of a dodecagon.

MANY of the roofs were made in ſuch a manner,

manner, that they could be walked upon, having a baluſtrade round them. Many of the upper ſtories had balconies before them, from whence the people had a proſpect into the ſtreet. The windows, even thoſe in the third ſtory, had ſhutters. Each houſe had a fine garden. The town had three churches, one for the lutherans, another for the reformed proteſtants, and the third for the quakers. The inhabitants were ſo numerous, that the ſtreet was always full. The baptiſts have likewiſe a meeting-houſe.

September the 22d. After I had been at church, I employed the remainder of the day in converſing with the moſt conſiderable people in town, who had lived here for a long while, and I enquired into the curioſities hereabouts.

Mr. *Cock* had a fine ſpring near his country ſeat; it came from a ſandy hill, and afforded water enough conſtantly to fill a little brook. Juſt above this ſpring Mr. *Cock* had erected a building from thoſe above-mentioned glittering ſtones, into which were put many jugs, and other earthen veſſels full of milk; for it kept very well in cold water during the great heat with which the ſummer is attended here.

I afterwards met with many houſes which were ſituated like this on ſprings, and

and therefore were deſtined to keep the meat and milk freſh.

ALMOST all the encloſures round the corn-fields and meadows hereabouts, were made of planks faſtened in a horizontal direction. I only perceived a hedge of privet in one ſingle place. The encloſures were not made like ours, for the people here take poſts from four to ſix feet in height, and make two or three holes into them, ſo that there was a diſtance of two feet and above between them. Such a poſt does the ſame ſervice as two, and ſometimes three poles are ſcarce ſufficient. The poſts were faſtened in the ground, at two or three fathoms diſtance from each other, and the holes in them kept up the planks, which were nine inches, and ſometimes a foot broad, and lay above each other from one poſt to the next. Such an encloſure therefore looked at a diſtance like the hurdles in which we encloſe the ſheep at night in *Sweden*. They were really no cloſer than hurdles, being only deſtined to keep out the greater animals, ſuch as cows and horſes. The hogs are kept near the farm-houſes every where about *Philadelphia*, and therefore this encloſure does not need to be made cloſer on their account. Cheſnut trees were commonly made uſe of for this purpoſe,

purpoſe, becauſe this wood keeps longeſt againſt putrefaction, and an encloſure made of it can ſtand for thirty years together. But where no cheſnut wood was to be got, the white, and likewiſe the black oaks were taken for that purpoſe. Of all kinds of wood, that of the red cedar holds out the longeſt. The greateſt quantity of it is bought up here; for near *Philadelphia* it is not plentiful enough, to be made uſe of for encloſures; however there are many encloſures near the town made of this wood.

The beſt wood for fuel in every body's opinion is the hiccory, or a ſpecies of walnut; for it heats well; but is not good for encloſures, ſince it cannot well withſtand putrefaction when it is in the open air. The white and black oaks are next in goodneſs for fuel. The woods with which *Philadelphia* is ſurrounded, would lead one to conclude, that fuel muſt be cheap there. But it is far from being ſo, becauſe the great and high foreſt near the town is the property of ſome people of quality and fortune, who do not regard the money which they could make of them. They do not fell ſo much as they require for their own uſe, and much leſs would they ſell it to others. But they leave the trees for times to come, expecting that wood will become much

much more ſcarce. However they ſell it to joiners, coach-makers, and other artiſts, who pay exorbitantly for it. For a quantity of hiccory of eight foot in length, and four in depth, and the pieces being likewiſe four foot long, they paid at preſent eighteen ſhillings of *Penſylvanian* currency. But the ſame quantity of oak only came to twelve ſhillings. The people who came at preſent to ſell wood in the market were peaſants, who lived at a great diſtance from the town. Every body complained that fuel in the ſpace of a few years, was riſen in price to many times as much again as it had been, and to account for this, the following reaſons were given: the town is encreaſed to ſuch a degree, as to be four or ſix times bigger, and more populous than what ſome old people have known it to be, when they were young. Many brick-kilns have been made hereabouts, which require a great quantity of wood. The country is likewiſe more cultivated than it uſed to be, and conſequently great woods have been cut down for that purpoſe; and the farms built in thoſe places likewiſe conſume a quantity of wood. Laſtly, they melt iron out of the ore, in ſeveral places about the town, and this work always goes on without interruption. For theſe reaſons it is concluded

concluded in future times *Philadelphia* will be obliged to pay a great price for wood.

The wine of blackberries, which has a very fine taſte, is made in the following manner. The juice of the blackberries is preſſed out, and put into a veſſel; with half a gallon of this juice, an equal quantity of water is well mixed. Three pounds of brown ſugar are added to this mixture, which muſt then ſtand for a while, and after that, it is fit for uſe. Cherry wine is made in the ſame manner, but care muſt be taken that when the juice is preſſed out, the ſtones be not cruſhed, for they give the wine a bad taſte.

They make brandy from peaches here, after the following method. The fruit is cut aſunder, and the ſtones are taken out. The pieces of fruit are then put into a veſſel, where they are left for three weeks or a month, till they are quite putrid. They are then put into the diſtilling veſſel, and the brandy is made and afterwards diſtilled over again. This brandy is not good for people who have a more refined taſte, but it is only for the common kind of people, ſuch as workmen and the like.

Apples yield a brandy, when prepared in the ſame manner as the peaches. But for this purpoſe thoſe apples are chiefly taken

taken which fall from the tree before they are ripe.

THE *American Night-ſhade*, or *Phytolacca decandra*, *Linn.* S. N. grows abundantly near the farms, on the highroad in hedges and buſhes, and in ſeveral places in the fields. Whenever I came to any of theſe places I was ſure of finding this plant in great abundance. Moſt of them had red berries, which grew in bunches, and looked very tempting, though they were not at all fit for eating. Some of theſe plants were yet in flower. In ſome places, ſuch as in the hedges, and near the houſes, they ſometimes grow two fathom high. But in the fields were always low; yet I could no where perceive that the cattle had eaten of it. A *German* of this place who was a confectioner told me, that the dyers gathered the roots of this plant and made a fine red dye of them.

HERE are ſeveral ſpecies of *Squirrels*. The *ground Squirrels*, or *Sciurus ſtriatus*, *Linn.* S. N. are commonly kept in cages, becauſe they are very pretty: but they cannot be entirely tamed. The *greater Squirrels*, or *Sciurus cinereus*, *Linn.* S. N. frequently do a great deal of miſchief in the plantations, but particularly deſtroy the maize. For they climb up the ſtalks, cut

the

the ears in pieces and eat only the looſe and ſweet kernel which lies quite in the inſide. They ſometimes come by hundreds upon a maize-field, and then deſtroy the whole crop of a countryman in one night. In *Maryland* therefore every one is obliged annually to bring four ſquirrels, and their heads are given to the ſurveyor, to prevent deceit. In other provinces every body that kills ſquirrels, received twopence a piece for them from the public, on delivering the heads. Their fleſh is eaten and reckoned a dainty. The ſkins are ſold, but are not much eſteemed. Squirrels are the chief food of the rattle-ſnake and other ſnakes, and it was a common fancy with the people hereabouts, that when the rattle ſnake lay on the ground, and fixed its eyes upon a ſquirrel, the latter would be as it were faſcinated, and that though it were on the uppermoſt branches of a tree, yet it would come down by degrees, till it leaped into the ſnake's mouth. The ſnake then licks the little animal ſeveral times, and makes it wet all over with its ſpittle, that it may go down the throat eaſier. It then ſwallows the whole ſquirrel at once. When the ſnake has made ſuch a good meal, it lies down to reſt without any concern.

The quadruped, which Dr. *Linnæus* in the

the memoirs of the Royal Academy of Sciences, has deſcribed by the name of *Urſus cauda elongata*, and which he calls *Urſus Lotor*, in his Syſtema Naturæ, is here called *Raccoon*. It is found very frequently, and deſtroys many chickens. It is hunted by dogs, and when it runs upon a tree to ſave itſelf, a man climbs upon the tree after it, and ſhakes it down to the ground, where the dogs kill it. The fleſh is eaten, and is reputed to taſte well. The bone of its male parts is made uſe of for a tobacco-ſtopper. The hatters purchaſe their ſkins, and make hats out of the hair, which are next in goodneſs to beavers. The tail is worn round the neck in winter, and therefore is likewiſe valuable. The *Raccoon* is frequently the food of ſnakes.

Some *Engliſhmen* aſſerted that near the river *Potomack* in *Virginia*, a great quantity of oyſter ſhells were to be met with, and that they themſelves had ſeen whole mountains of them. The place where they are found is ſaid to be about two *Engliſh* miles diſtant from the ſea-ſhore. The proprietor of that ground burns lime out of them. This ſtratum of oyſter-ſhells is two fathom and more deep. Such quantities of ſhells have likewiſe been found in other places, eſpecially in *New York*, on digging in the

ground; and in one place, at the diſtance of ſome *Engliſh* miles from the ſea, a vaſt quantity of oyſter-ſhells, and of other ſhells was found. Some people conjectured that the natives had formerly lived in that place, and had left the ſhells of the oyſters which they had conſumed, in ſuch great heaps. But others could not conceive how it happened that they were thrown in ſuch immenſe quantities all into one place.

EVERY one is of opinion that the *American* ſavages were a very good-natured people, if they were not attacked. No body is ſo ſtrict in keeping his word as a ſavage. If any one of their allies come to viſit them, they ſhew him more kindneſs, and greater endeavours to ſerve him, than he could have expected from his own countrymen. Mr. *Cock* gave me the following relation, as a proof of their integrity. About two years ago, an *Engliſh* merchant travelling amongſt the ſavages, in order to ſell them neceſſaries, and to buy other goods, was ſecretly killed, without the murderer's being found out. But about a year after, the ſavages found out the guilty perſon amongſt themſelves. They immediately took him up, bound his hands on his back, and thus ſent him with a guard to the governor at *Philadelphia*, and ſent him word, that they could

no

no longer acknowledge this wretch (who had been ſo wicked towards an *Engliſhman*) as their countryman, and therefore would have nothing more to do with him, and that they delivered him up to the governor, to be puniſhed for his villainy as the laws of *England* direct. This Indian was afterwards hanged at *Philadelphia*.

THEIR good natural parts are proved by the following account, which many people have given me as a true one. When they ſend their ambaſſadors to the *Engliſh* colonies, in order to ſettle things of conſequence with the governor, they ſit down on the ground, as ſoon as they come to his audience, and hear with great attention the governor's demands which they are to make an anſwer to. His demands are ſometimes many. Yet they have only a ſtick in their hand, and make their marks on it with a knife, without writing any thing elſe down. But when they return the next day to give in their reſolutions, they anſwer all the governor's articles in the ſame order, in which he delivered them, without leaving one out, or changing the order, and give ſuch accurate anſwers, as if they had an account of them at full length in writing.

MR. *Sleidorn* related another ſtory, which gave me great pleaſure. He ſaid he had

been at *New York*, and had found a venerable old *American* ſavage amongſt ſeveral others in an inn. This old man began to talk with *Sleidorn* as ſoon as the liquor was getting the better of his head, and boaſted that he could write and read in *Engliſh*. *Sleidorn* therefore deſired leave to aſk a queſtion, which the old man readily granted. *Sleidorn* then aſked him, whether he knew who was firſt circumciſed? and the old man immediately anſwered, *Father Abraham*; but at the ſame time aſked leave to propoſe a queſtion in his turn, which *Sleidorn* granted; the old man then ſaid, who was the firſt quaker? *Sleidorn* ſaid it was uncertain, that ſome took one perſon for it, and ſome another; but the cunning old fellow told him, you are miſtaken, ſir; *Mordecai* was the firſt quaker, for he would not take off his hat to *Haman*. Many of the ſavages, who are yet heathens, are ſaid to have ſome obſcure notion of the deluge. But I am convinced from my own experience, that they are not at all acquainted with it.

I MET with people here who maintained that giants had formerly lived in theſe parts, and the following particulars confirmed them in this opinion. A few years ago ſome people digging in the ground, met with a grave which contained human bones of an aſtoniſh-

aſtoniſhing ſize. The *Tibia* is ſaid to have been fourteen feet long, and the *os femoris* to have meaſured as much. The teeth are likewiſe ſaid to have been of a ſize proportioned to the reſt. But more bones of this kind have not yet been found. Perſons ſkilled in anatomy, who have ſeen theſe bones, have declared that they were human bones. One of the teeth has been ſent to *Hamburgh*, to a perſon who collected natural curioſities. Among the ſavages, in the neighbourhood of the place where the bones were found, there is an account handed down through many generations from fathers to children, that in this neighbourhood, on the banks of a river, there lived a very tall and ſtrong man, in ancient times, who carried the people over the river on his back, and waded in the water, though it was very deep. Every body to whom he did this ſervice gave him ſome maize, ſome ſkins of animals, or the like. In fine he got his livelyhood by this means, and was as it were the ferryman of thoſe who wanted to paſs the river.

The ſoil here conſiſts for the greateſt part of ſand, which is more or leſs mixed with clay. Both the ſand and the clay, are of the colour of pale bricks. To judge by

appearance the ground was none of the beſt; and this conjecture was verified by the inhabitants of the country. When a corn-field has been obliged to bear the ſame kind of corn for three years together, it does not after that produce any thing at all if it be not well manured, or fallowed for ſome years. Manure is very difficult to be got, and therefore people rather leave the field uncultivated. In that interval it is covered with all ſorts of plants and trees; and the countryman in the mean while, cultivates a piece of ground which has till then been fallow, or he chuſes a part of the ground which has never been ploughed before, and he can in both caſes be pretty ſure of a plentiful crop. This method can here be uſed with great convenience. For the ſoil is looſe, ſo that it can eaſily be ploughed, and every countryman has commonly a great deal of land for his property. The cattle here are neither houſed in winter, nor tended in the fields, and for this reaſon they cannot gather a ſufficient quantity of dung.

All the cattle has been originally brought over from *Europe*. The natives have never had any, and at preſent few of them care to get any. But the cattle degenerates

nerates by degrees here, and becomes ſmaller. For the cows, horſes, ſheep, and hogs, are all larger in *England*, though thoſe which are brought over are of that breed. But the firſt generation decreaſes a little, and the third and fourth is of the ſame ſize with the cattle already common here. The climate, the ſoil, and the food, altogether contribute their ſhare towards producing this change.

It is remarkable that the inhabitants of the country, commonly ſooner acquire underſtanding, but likewiſe grow ſooner old than the people in *Europe*. It is nothing uncommon to ſee little children, giving ſprightly and ready anſwers to queſtions that are propoſed to them, ſo that they ſeem to have as much underſtanding as old men. But they do not attain to ſuch an age as the *Europeans*, and it is almoſt an unheard of thing, that a perſon born in this country, ſhould live to be eighty or ninety years of age. But I only ſpeak of the *Europeans* that ſettled here. For the ſavages, or firſt inhabitants, frequently attained a great age, though at preſent ſuch examples are uncommon, which is chiefly attributed to the great uſe of brandy, which the ſavages have learnt of the *Europeans*. Thoſe who are born in *Europe* attain a greater age here,

than thoſe who are born here, of *European* parents. In the laſt war, it plainly appeared that theſe new *Americans* were by far leſs hardy than the *Europeans* in expeditions, ſieges, and long ſea voyages, and died in numbers. It is very difficult for them to uſe themſelves to a climate different from their own. The women ceaſe bearing children ſooner than in *Europe*. They ſeldom or never have children, after they are forty or forty-five years old, and ſome leave off in the thirtieth year of their age. I enquired into the cauſes of this, but no one could give me a good one. Some ſaid it was owing to the affluence in which the people live here. Some aſcribed it to the inconſtancy and changeableneſs of the weather, and believed that there hardly was a country on earth in which the weather changes ſo often in a day, as it does here. For if it were ever ſo hot, one could not be certain whether in twenty-four hours there would not be a piercing cold. Nay, ſometimes the weather will change five or ſix times a day.

The trees in this country have the ſame qualities as its inhabitants. For the ſhips which are built of *American* wood, are by no means equal in point of ſtrength, to thoſe which are built in *Europe*. This is what

what nobody attempts to contradict. When a ſhip which is built here, has ſerved eight or twelve years it is worth little; and if one is to be met with, which has been in uſe longer and is yet ſerviceable, it is reckoned very aſtoniſhing. It is difficult to find out the cauſes from whence this happens. Some lay the fault to the badneſs of the wood: others condemn the method of building the ſhips, which is to make them of trees which are yet green, and have had no time to dry. I believe both cauſes are joined. For I found oak, which at the utmoſt had been cut down about twelve years, and was covered by a hard bark. But upon taking off this bark, the wood below it was almoſt entirely rotten, and like flour, ſo that I could rub it into powder between my fingers. How much longer will not our *European* oak ſtand before it moulders?

At night we returned to *Philadelphia*.

September the 23d. There are no *Hares* in this country, but ſome animals, which are a medium between our *Hares* and *Rabbets*, and make a great devaſtation whenever they get into fields of cabbage and turneps.

Many people have not been able to find out why the *North American* plants which are carried to *Europe* and planted there, for the

the greateſt part flower ſo late, and do not get ripe fruit before the froſt overtakes them, although it appears from ſeveral accounts of travels, that the winters in *Penſylvania*, and more ſo thoſe in *New York*, *New England*, and *Canada*, are full as ſevere as our *Swediſh* winters, and therefore are much ſeverer than thoſe which are felt in *England*. Several men of judgment charged me for this reaſon to examine and enquire into this phœnomenon with all poſſible care. But I ſhall inſtead of an anſwer, rather give a few remarks which I made upon the climate and upon the plants of *North America*, and leave my readers at liberty to draw the concluſions themſelves.

1. It is true, that the winters in *Penſylvania*, and much more thoſe in the more northern provinces, are frequently as ſevere as our *Swediſh* winters, and much colder than the *Engliſh* ones, or thoſe of the ſouthern parts of *Europe*. For I found at *Philadelphia*, which is above twenty deg. more ſoutherly than ſeveral provinces in *Sweden*, that the thermometer of profeſſor *Celſius*, fell twenty-four deg. below the freezing point in winter. Yet I was aſſured that the winters I ſpent here, were none of the coldeſt, but only common ones, which I could likewiſe conclude from the *Delaware*'s not

not being frozen ſtrong enough to bear a carriage at *Philadelphia* during my ſtay, though this often happens. On conſidering the breadth of the river which I have already mentioned in my deſcription of *Philadelphia*, and the difference between high and low water, which is eight *Engliſh* feet; it will pretty plainly appear that a very intenſe froſt is required to cover the *Delaware* with ſuch thick ice.

2. But it is likewiſe true, that though the winters are ſevere here, yet they are commonly of no long duration, and I can juſtly ſay, that they do not continue above two months and ſometimes even leſs, at *Philadelphia*; and it is ſomething very uncommon when they continue for three months together, in ſo much that it is put into the gazettes. Nearer the pole the winters are ſomewhat longer, and in the quite northern parts they are as long as the *Swediſh* winters. The daily meteorological obſervations which I have made during my ſtay in *America*, and which I intend to annex at the end of each volume of this work, will give more light in this matter.

3. The heat in ſummer is exceſſive, and without intermiſſion. I own I have ſeen the thermometer riſe to nearly the ſame degree at *Aobo* in *Finland*. But the difference

ence is, that when the thermometer of professor *Celsius* rose to thirty deg. above the freezing point once in two or three summers at *Aobo*, the same thermometer did not only for three months together stand at the same degree, but even sometimes rose higher; not only in *Pensylvania*, but likewise in *New York*, *Albany*, and a great part of *Canada*. During the summers which I spent at *Philadelphia*, the thermometer has two or three times risen to thirty-six deg. above the freezing point. It may therefore with great certainty be said, that in *Pensylvania* the greatest part of *April*, the whole *May*, and all the following months till *October*, are like our *Swedish* months of *June* and *July*. So excessive and continued a heat must certainly have very great effects. I here again refer to my meteorological observations. It must likewise be ascribed to the effects of this heat that the common melons, the water melons, and the pumpions of different sorts are sown in the fields without any bells or the like put over them, and yet are ripe as early as *July*; further, that cherries are ripe at *Philadelphia* about the 25th. of *May*, and that in *Pensylvania* the wheat is frequently reaped in the middle of *June*.

4. The whole of *September*, and half, if not

not the whole of *October*, are the fineſt months in *Penſylvania*, for the preceding ones are too hot. But theſe repreſent our *July* and half of *Auguſt*. The greateſt part of the plants are in flower in *September*, and many do not begin to open their flowers before the latter end of this month. I make no doubt that the goodneſs of the ſeaſon, which is enlivened by a clear ſky, and a tolerably hot ſun-ſhine, greatly contributes towards this laſt effort of Flora. Yet though theſe plants come out ſo late, they are quite ripe before the middle of *October*. But I am not able to account for their coming up ſo late in autumn, and I rather aſk, why do not the *Centaurea Jacea*, the *Gentiana*, *Amarella* and *Centaurium* of *Linnæus*, and the common golden rod, or *Solidago Virgaurea* flower before the end of ſummer? or why do the common noble liverwort, or *Anemone Hepatica*, the wild violets *(Viola martia, Linn.)* the mezereon *(Daphne Mezereum, Linn.)* and other plants ſhew their flowers ſo early in ſpring? It has pleaſed the Almighty Creator to give to them this diſpoſition. The weather at *Philadelphia* during theſe months, is ſhewn by my meteorological tables. I have taken the greateſt care in my obſervations, and have always avoided putting the thermometer

meter into any place where the ſun could ſhine upon it, or where he had before heated the wall by his beams; for in thoſe caſes my obſervations would certainly not have been exact. The weather during our *September* and *October* is too well known to want an explanation.*

5. HOWEVER there are ſome ſpontaneous plants in *Penſylvania*, which do not every year bring their ſeeds to maturity before the cold begins. To theſe belong ſome ſpecies of *Gentiana*, of *Aſters*, and others. But in theſe too the wiſdom of the Creator has wiſely ordered every thing in its turn. For almoſt all the plants which have the quality of flowering ſo late in autumn, are perennial, or ſuch as, though they have no ſeed to propagate themſelves, can revive by ſhooting new branches and ſtalks from the ſame root every year. But perhaps a natural cauſe may be given to account for the late growth of theſe plants. Before the *Europeans* came into this country, it was inhabited by ſavage nations, who practiſed agriculture but little or not at all, and chiefly lived

* THE *Engliſh* reader, who is perhaps not ſo well acquainted with the weather of the *Swediſh* autumn, may form an idea of it, by having recourſe to the *Calendarium Floræ*, or the botanical and œconomical almanack of *Sweden*, in Dr. *Linnæus*'s Amœn. Academ. and in Mr. *Stillingfleet*'s *Swediſh* tracts, tranſlated from the Amœn. Acad. 2d. edition. F.

lived upon hunting and fiſhing. The woods therefore have never been meddled with, except that ſometimes a ſmall part was deſtroyed by fire. The accounts which we have of the firſt landing of the *Europeans* here, ſhew that they found the country all over covered with thick foreſts.* From hence it follows, that excepting the higher trees, and the plants which grow in the water or near the ſhore, the reſt muſt for the greateſt part have been obliged to grow perhaps for a thouſand years together, in a ſhade, either below or between the trees, and they therefore naturally belong to thoſe which are only peculiar to woody and ſhady places. The trees in this country drop their leaves in ſuch quantities in autumn, that the ground is covered with them to the depth of four or five inches. Theſe leaves lie a good while in the next ſummer before they moulder, and this muſt of courſe hinder the growth of the plants which are under the trees, at the ſame time depriving them of the few rays of the ſun which can come down to them through the thick leaves at the top of the trees. Theſe cauſes joined together make ſuch plants flower much later than they would otherwiſe do. May it

* Vide *Hackluyt*'s collect. voy. 111. 246.

it not therefore be ſaid, that in ſo many centuries theſe plants had at laſt contracted a *habit* of coming up very late, and that it would now require a great ſpace of time to make them loſe this habit, and uſe them to quicken their growth?

September the 24th. We employed this whole day in gathering the ſeeds of plants of all kinds, and in putting ſcarce plants into the herbal.

September the 25th. Mr. *Heſſelius* made me a preſent of a little piece of petrified wood, which was found in the ground here. It was four inches long, one inch broad, and three lines thick. It might plainly be ſeen that it had formerly been wood. For in the places where it had been poliſhed, all the longitudinal fibres were eaſily diſtinguiſhable, ſo that it might have been taken for a piece of oak which was cut ſmooth. My piece was part of a ſtill greater piece. It was here thought to be petrified hiccory. I afterwards got more of it from other people. Mr. *Lewis Evans* told me that on the boundaries of *Virginia*, a great petrified block of hiccory had been found in the ground, with the bark on it, which was likewiſe petrified.

Mr. *John Bartram* is an *Engliſhman*, who lives in the country about four miles from

from *Philadelphia*. He has acquired a great knowledge of natural philoſophy and hiſtory, and ſeems to be born with a peculiar genius for theſe ſciences. In his youth he had no opportunity of going to ſchool. But by his own diligence and indefatigable application he got, without inſtruction, ſo far in Latin, as to underſtand all Latin books, and even thoſe which were filled with botanical terms. He has in ſeveral ſucceſſive years made frequent excurſions into different diſtant parts of *North America*, with an intention of gathering all ſorts of plants which are ſcarce and little known. Thoſe which he found he has planted in his own botanical garden, and likewiſe ſent over their ſeeds or freſh roots to *England*. We owe to him the knowledge of many ſcarce plants, which he firſt found, and which were never known before. He has ſhewn great judgment, and an attention which lets nothing eſcape unnoticed. Yet with all theſe great qualities, he is to be blamed for his negligence; for he did not care to write down his numerous and uſeful obſervations. His friends at *London* once obliged him to ſend them a ſhort account of one of his travels, and they were very ready, with a good intention, though not with ſufficient judgment, to get this account printed.

But this book, did Mr. *Bartram* more harm than good; for as he is rather backward in writing down what he knows, this publication was found to contain but few new obſervations. It would not however be doing juſtice to Mr. *Bartram*'s merit, if it were to be judged of by this performance. He has not filled it with a thouſandth part of the great knowledge, which he has acquired in natural philoſophy and hiſtory, eſpecially in regard to *North America*. I have often been at a loſs to think of the ſources, from whence he got many things which came to his knowledge. I likewiſe owe him many things, for he poſſeſſed that great quality of communicating every thing he knew. I ſhall therefore in the ſequel, frequently mention this gentleman. For I ſhould never forgive myſelf, if I were to omit the name of the firſt inventor, and claim that as my own invention, which I learnt from another perſon.

MANY *Muſcle ſhells*, or *Mytili anatini*, are to be met with on the north-weſt ſide of the town in the clay-pits, which were at preſent filled with water from a little brook in the neighbourhood. Theſe muſcles ſeem to have been waſhed into that place by the tide, when the water in the brook was high. For theſe clay-pits are not old, but were

lately made. Poor boys ſometimes go out of town, wade in the water, and gather great quantities of theſe ſhells, which they ſell very eaſily, they being reckoned a dainty.

THE *Virginian Azarole* with a red fruit, or *Linnæus*'s *Cratægus Crus galli*, is a ſpecies of hawthorn, and they plant it in hedges, for want of that hawthorn, which is commonly uſed for this purpoſe in *Europe*. Its berries are red, and of the ſame ſize, ſhape, and taſte with thoſe of our hawthorn. Yet this tree does not ſeem to make a good hedge, for its leaves were already fallen, whilſt other trees ſtill preſerved theirs. Its ſpines are very long and ſharp; their length being two or three inches. Theſe ſpines are applied to ſome inconſiderable uſe. Each berry contains two ſtones.

MR. *Bartram* aſſured me, that the *North American* oak, cannot reſiſt putrefaction for near ſuch a ſpace of time, as the *European*. For this reaſon, the boats (which carry all ſorts of goods down from the upper parts of the country) upon the river *Hudſon*, which is one of the greateſt in theſe parts, are made of two kinds of wood. That part which muſt always be under water, is made of black oak; but

the upper part, which is now above and now under water, and is therefore more expoſed to putrefaction, is made of red cedar or *Juniperus Virginiana*, which is reckoned the moſt hardy wood in the country. The bottom is made of black oak, becauſe that wood is very tough. For the river being full of ſtones, and the boats frequently running againſt them, the black oak gives way, and therefore does not eaſily crack. But the cedar would not do for this purpoſe; becauſe it is hard and brittle. The oak likewiſe is not ſo much attacked by putrefaction, when it is always kept under water.

In autumn, I could always get good pears here; but every body acknowledged, that this fruit would not ſucceed well in the country.

All my obſervations and remarks on the qualities of the *Rattle-ſnake*, are inſerted in the Memoirs of the *Swediſh* Academy of Sciences, for the year 1752, p. 316, and for the year 1753, p. 54, and thither I refer the reader.*

Bears are very numerous higher up in the country, and do much miſchief. Mr. *Bartram* told me, that when a bear catches a cow,

* Vide Medical, &c. caſes and experiments, tranſlated from the *Swediſh*, *London* 1758. p. 282. P.

a cow, he kills her in the following manner: he bites a hole into the hide, and blows with all his power into it, till the animal ſwells exceſſively and dies; for the air expands greatly between the fleſh and the hide.* An old *Swede* called *Nils Guſtave's ſon*, who was ninety-one years of age, ſaid, that in his youth, the bears had been very frequent hereabouts, but that they had ſeldom attacked the cattle: that whenever a bear was killed, its fleſh was prepared like pork, and that it had a very good taſte. And the fleſh of bears is ſtill prepared like ham, on the river *Morris*. The environs of *Philadelphia*, and even the whole province of *Penſylvania* in general contain very few bears, they having been extirpated by degrees. In *Virginia* they kill them in ſeveral different ways. Their fleſh is eaten by both rich and poor, ſince it is reckoned equal in goodneſs to pork. In

* This has all the appearance of a vulgar error: neither does the ſucceeding account of the *American* bears being carnivorous, agree with the obſervations of the moſt judicious travellers, who deny the fact. P.

But however it might be eaſible to reconcile both opinions. For *Europe* has two or three kinds of bears, one ſpecies of which is carnivorous, the other lives only on vegetables: the large brown ſpecies, with its ſmall variety, are reputed to be carnivorous, the black ſpecies is merely phytivorous. In caſe therefore both ſpecies are found in *North America*, it would be very eaſy to account for their being both carnivorous and not. F.

ſome parts of this province, where no hogs can be kept on account of the great numbers of bears, the people are uſed to catch and kill them, and to uſe them inſtead of hogs. The *American* bears however, are ſaid to be leſs fierce and dangerous, than the *European* ones.

September the 26th. The broad plantain, or *Plantago major*, grows on the high-roads, foot paths, meadows, and in gardens in great plenty. Mr. *Bartram* had found this plant in many places on his travels, but he did not know whether it was an original *American* plant, or whether the *Europeans* had brought it over. This doubt had its riſe from the ſavages (who always had an extenſive knowledge of the plants of the country) pretending that this plant never grew here before the arrival of the *Europeans*. They therefore give it a name which ſignifies, the *Engliſhman's foot*, for they ſay that where a *European* had walked, there this plant grew in his foot ſteps.

The *Chenopodium album*, or *Gooſefoot* with ſinuated leaves, grows in plenty in the gardens. But it is more ſcarce near the houſes, in the ſtreets, on dunghills and corn-fields. This ſeems to ſhew, that it is not a native of *America*, but has been brought over amongſt other ſeeds from *Europe*. In the

ſame

ſame manner it is thought that the *Tanſey* (*Tanacetum vulgare, Linn.*) which grows here and there in the hedges, on the roads, and near houſes, was produced from *European* ſeeds.

THE *common vervain*, with blue flowers, or *verbena officinalis*, was ſhewn to me by Mr. *Bartram*, not far from his houſe in a little plain near *Philadelphia*. It was the only place where he had found it in *America*. And for this reaſon I ſuppoſe it was likewiſe ſown here amongſt other *European* ſeeds.

MR. *Bartram* was at this time building a houſe in *Philadelphia*, and had ſunk a cellar to a conſiderable depth, the ſoil of which was thrown out. I here obſerved the following ſtrata. The upper looſe ſoil was only half a foot deep, and of a dark brown colour. Under it was a ſtratum of clay ſo much blended with ſand, that it was in greater quantity than the clay itſelf; and this ſtratum was eight feet deep. Theſe were both brick coloured. The next ſtratum conſiſted of little pebbles mixed with a coarſe ſand. The ſtones conſiſted either of a *clear*, or of a *dark Quartz*;* they were

* *Quartzum hyalinum, Linn.* Syſt. nat. 3. p. 65. *Quartzum ſolidum pellucidum, Wallerii* Miner. 91.

The

quite ſmooth and roundiſh on the outſide, and lay in a ſtratum which was a foot deep. Then the brick-coloured clay mixed with ſand appeared again. But the depth of this ſtratum could not be determined. Query, could the river formerly have reached to this place and formed theſe ſtrata?

Mr. *Bartram* has not only frequently found oyſter-ſhells in the ground, but likewiſe met with ſuch ſhells and ſnails, as undoubtedly belong to the ſea, at the diſtance of a hundred and more *Engliſh* miles from the ſhore. He has even found them on the ridge of mountains which ſeparate the *Engliſh* plantations from the habitations of the ſavages. Theſe mountains which the *Engliſh* call the *blue mountains*, are of conſiderable height, and extend in one continued chain from north to ſouth, or from *Canada* to *Carolina*. Yet in ſome places they have gaps, which are as it were broke through, to afford a paſſage for the great rivers, which roll down into the lower country.

The *Caſſia Chamæcriſta* grew on the roads through the woods, and ſometimes on

The common Quartz, *Forſter*'s Mineralogy, p. 16. And *Quartzum coloratum*, *Linn.* Syſt. nat. 3. p. 65. *Quartzum ſolidum opacum coloratum*. *Wall.* Min. 99. *The impure Quartz*, Forſt. Min. p. 16.

on uncultivated fields, eſpecially when ſhrubs grew in them. Its leaves are like thoſe of the *Senſitive plant*, or *Mimoſa*, and have likewiſe the quality of contracting when touched, in common with the leaves of the latter.

The *Crows* in this country are little different from our common crows in *Sweden*. Their ſize is the ſame with that of our crows, and they are as black as jet in every part of their body. I ſaw them flying to day in great numbers together. Their voice is not quite like that of our crows, but has rather more of the cry of the rook, or *Linnæus*'s *Corvus frugilegus*.

Mr. *Bartram* related, that on his journeys to the northern *Engliſh* colonies, he had diſcovered great holes in the mountains on the banks of rivers, which according to his deſcription, muſt exactly have been ſuch *giants pots*,* as are to be met with in *Sweden*, and which I have deſcribed in a particular diſſertation read in the Royal *Swediſh* Academy of Sciences. Mr. *Bartram* has likewiſe addreſſed ſome letters to the Royal Society at *London* upon this ſubject. For ſome

* In *Sweden*, and in the north of *Germany*, the round holes in rivers, with a ſtoney or rocky bed, which the whirling of the water has made, are called giants pots; theſe holes are likewiſe mentioned in Mr. *Groſleys new obſervations on Italy*, Vol. 1. p. 8. F.

ſome people pretended, that theſe holes were made by the ſavages, that they might in time of war hide their corn and other valuable effects in them. But he wrote againſt this opinion, and accounted for the origin of theſe cavities in the following manner. When the ice ſettles, many pebbles ſtick in it. In ſpring when the ſnow melts, the water in the rivers ſwells ſo high that it reaches above the place where theſe holes are now found in the mountains. The ice therefore will of courſe float as high. And then it often happens, that the pebbles which were contained in it, ever ſince autumn when it firſt ſettled on the banks of the river, fall out of the ice upon the rocky bank, and are from thence carried into a cleft or crack by the water. Theſe pebbles are then continually turned about by the water, which comes in upon them, and by this means they gradually form the hole. The water at the ſame time poliſhes the ſtone by its circular motion round it, and helps to make the hole or cavity round. It is certain that by this turning and toſſing, the ſtone is at laſt unfit for this purpoſe; but the river throws commonly every ſpring other ſtones inſtead of it into the cavity, and they are turned round in the ſame manner. By this whirling both the mountain

and

and the ſtone afford either a fine or a coarſe ſand, which is waſhed away by the water when in ſpring, or at other times it is high enough to throw its waves into the cavity. This was the opinion of Mr. *Bartram* about the origin of theſe cavities. The Royal Society of Sciences at *London*, has given a favourable reception to, and approved of them.* The remarks which I made in the ſummer of the year 1743, during my ſtay at *Land*'s-*Ort*, in my country, will prove that I was at that time of the ſame opinion, in regard to theſe holes. I have ſince further explained this opinion in a letter to the Royal Academy of Sciences; and this letter is ſtill preſerved in the Academy's Memoirs, which have not yet been publiſhed. But there is great reaſon to doubt, whether all cavities of this kind in mountains, have the ſame origin.

HERE are different ſpecies of *Mulberry trees*, which grow wild in the foreſts of *north* and *ſouth America*. In theſe parts the red mulberry trees are more plentiful than any other. However Mr. *Bartram* aſſured me that he had likewiſe ſeen the white

* How far this approbation of the Royal Society, ought to be credited, is to be underſtood from the advertiſements publiſhed at the head of each new volume of the Philoſophical Tranſactions. F.

white mulberry trees growing wild, but that they were more ſcarce. I aſked him and ſeveral other people of this country; why they did not ſet up ſilk manufactures, having ſuch a quantity of mulberries, which ſucceed ſo eaſily? For it has been obſerved that when the berries fall upon the ground where it is not compact but looſe, they ſoon put out ſeveral fine delicate ſhoots. But they replied that it would not be worth while to erect any ſilk manufactures here, becauſe labour is ſo dear. For a man gets from eighteen pence to three ſhillings and upwards, for one day's work, and the women are paid in proportion. They were therefore of opinion that the cultivation of all ſorts of corn, of hemp, and of flax, would be of greater advantage, and that at the ſame time it did not require near ſo much care as the feeding of ſilk worms. By the trials of a governor in *Connecticut*, which is a more northern province than *New York*, it is evident however, that ſilk worms ſucceed very well here, and that this kind of mulberry trees is very good for them. The governor brought up a great quantity of ſilk worms in his court yard; and they ſucceeded ſo well, and ſpun ſo much ſilk, as to afford him a ſufficient quantity for cloathing himſelf and all his family.

SEVERAL

Several ſorts of *Vines* likewiſe grow wild hereabouts. Whenever I made a little excurſion out of town, I ſaw them in numerous places climbing up trees and hedges. They claſp around them, and cover them ſometimes entirely, and even hang down on the ſides. This has the ſame appearance at a diſtance, as the tendrils of hops climbing along trees. I enquired of Mr. *Bartram* why they did not plant vineyards, or preſs wine from the grapes of the wild vine. But they anſwered, that the ſame objection lay againſt it, which lies againſt the erection of a ſilk manufacture, that the neceſſary hands were too ſcarce, and it therefore was more rational to make agriculture their chief employment. But the true reaſon undoubtedly is, that the wine which is preſſed out of moſt of the *North American* wild grapes is ſour and ſharp, and has not near ſuch an agreeable taſte, as that which is made from *European* grapes.

The *Virginian Wake robin*, or *Arum Virginicum*, grows in wet places. Mr. *Bartram* told me, that the ſavages boiled the *ſpadix* and the *berries* of this flower, and devoured it as a great dainty. When the berries are raw, they have a harſh, pungent

taſte,

taſte, which they loſe in great meaſure upon boiling.

THE *Sarothra Gentianoides*, grows abundantly in the fields and under the buſhes, in a dry ſandy ground near *Philadelphia*. It looks extremely like our whortleberry buſhes when they firſt begin to green, and when the points of the leaves are yet red. Mr. *Bartram* has ſent this plant to Dr. *Dillenius*, but that gentleman did not know where he ſhould range it. It is reckoned a very good traumatic, and this quality Mr. *Bartram* himſelf experienced; for being thrown and kicked by a vicious horſe, in ſuch a manner as to have both his thighs greatly hurt, he boiled the *Sarothra* and applied it to his wounds. It not only immediately appeaſed his pain, which before had been very violent, but he likewiſe by its aſſiſtance recovered in a ſhort time.

HAVING read in Mr. *Miller*'s *Botanical Dictionary*, that Mr. *Peter Collinſon* had a particular *Larch tree* from *America* in his garden, I aſked Mr. *Bartram* whether he was acquainted with it, he anſwered, that he had ſent it himſelf to Mr. *Collinſon*, that it only grew in the eaſtern parts of *New Jerſey*, and that he had met with it in no other *Engliſh* plantation. It differs from the other ſpecies of *Larch trees*, its cones

cones being much leſs. I afterwards ſaw this tree in great plenty in *Canada*.

Mr. *Bartram* was of opinion, that the apple tree was brought into *America* by the *Europeans*, and that it never was there before their arrival. But he looked upon peaches as an original *American* fruit, and as growing wild in the greateſt part of *America*. Others again were of opinion, that they were firſt brought over by the *Europeans*. But all the *French* in *Canada* agreed, that on the banks of the river *Miſſiſippi* and in the country thereabouts peaches were found growing wild in great quantity.*

September the 27th. The tree whichthe *Engliſh* here call *Perſimon*, is the *Dioſpyros Virginiana* of *Linnæus*. It grows for the greateſt part in wet places, round the water pits. I have already mentioned that the fruits of this tree are extremely bitter and ſharp before they are quite ripe, and that being eaten in that ſtate they quite contract

* *Thomas Herriot*, ſervant to Sir *Walter Raleigh*, who was employed by him to examine into the productions of *North America*, makes no mention of the peach among the other fruits he deſcribes, and *M. du Pratz*, who has given a very good account of *Louiſiana* and the *Miſſiſippi*, ſays, that the natives got their peaches from the *Engliſh* colony of *Carolina*, before the *French* ſettled there. P.

contract ones mouth, and have a very disagreeable taste. But as soon as they are ripe, which does not happen till they have been quite softened by the frost, they are a very agreeable fruit. They are here eaten raw, and seldom any other way. But in a great book, which contains a description of *Virginia*, you meet with different ways of preparing the *Persimon*, under the article of that name. Mr. *Bartram*, related that they were commonly put upon the table amongst the sweet-meats, and that some people made a tolerably good wine of them. Some of these Persimon fruits were dropped on the ground in his garden, and were almost quite ripe, having been exposed to a great degree of the heat of the sun. We picked up a few and tasted them, and I must own that those who praised this fruit as an agreeable one, have but done it justice. It really deserves a place among the most palatable fruit of this country, when the frost has thoroughly conquered its acrimony.

The *Verbascum Thapsus*, or *great white Mullein*, grows in great quantity on roads, in hedges, on dry fields, and high meadows of a ground mixed with sand. The *Swedes* here call it the *tobacco of the savages*, but owned, that they did not know whether

ther or no the Indians really uſed this plant inſtead of tobacco. The *Swedes* are uſed to tie the leaves round their feet and arms, when they have the ague. Some of them prepared a tea from the leaves, for the dyſentery. A *Swede* likewiſe told me, that a decoction of the roots was injected into the wounds of the cattle which are full of worms, which killed theſe worms, and made them fall out.*

September the 28th. The meadows which are ſurrounded by wood, and were at preſent mown, have a fine lively verdure. On the contrary when they lie on hills, or in open fields, or in ſome elevated ſituation, eſpecially ſo that the ſun may be able to act upon them without any obſtacles, their graſs looks brown and dry. Several people from *Virginia* told me, that on account of the great heat and drought, the meadows and paſtures almoſt always had a brown colour, and looked as if they were burnt. The inhabitants of thoſe parts do not therefore enjoy the pleaſure which a *European*

 feels

* These worms are the Larva's of the *Oeſtrus* or *Gadfly*, which depoſits its eggs on the back of cattle, and the Larva's being hatched from theſe eggs, cauſe great ſores, wherein they live till they are ready for their change. In the ſouth of *Ruſſia* they uſe for the ſame purpoſe the decoction of *Veratrum*, or *the white Hellebore*. F.

feels at the ſight of our verdant, odoriferous meadows.

The *American Nightſhade*, or *the Phytolacca decandra*, grows abundantly in the fields, and under the trees, on little hills. Its black berries are now ripe. We obſerved to day ſome little birds with a blue plumage, and of the ſize of our *Hortulans* and *Yellow Hammers (Emberiza Citrinella* and *Emberiza Hortulanus)* flying down from the trees, in order to ſettle upon the nightſhade and eat its berries.

Towards night I went to Mr. *Bartram*'s country ſeat.

September the 29th. The *Gnaphalium margaritaceum*, grows in aſtoniſhing quantities upon all uncultivated fields, glades, hills, and the like. Its height is different according to its different ſoil and ſituation. Sometimes it is very ramoſe, and ſometimes very little. It has a ſtrong, but agreeable ſmell. The *Engliſh* call it *Life everlaſting*; for its flowers, which conſiſt chiefly of dry, ſhining, ſilvery leaves (Folia calycina) do not change when dried. This plant is now every where in full bloſſom. But ſome have already loſt the flowers, and are beginning to drop the ſeeds. The *Engliſh* ladies were uſed to gather great quantities of this *Life everlaſting*, and to pluck them with

with the ſtalks. For they put them into pots with or without water, amongſt other fine flowers which they had gathered both in the gardens and in the fields, and placed them as an ornament in the rooms. The *Engliſh* ladies in general are much inclined to have fine flowers all the ſummer long, in or upon the chimneys, ſometimes upon a table, or before the windows, either on account of their fine appearance, or for the ſake of their ſweet ſcent. The *Gnaphalium* above-mentioned, was one of thoſe, which they kept in their rooms during the winter, becauſe its flowers never altered from what they were when they ſtood in the ground. Mr. *Bartram* told me another uſe of this plant. A decoction of the flowers and ſtalks is uſed to bathe any pained or bruiſed part, or it is rubbed with the plant itſelf tied up in a bag.

Instead of flax ſeveral people made uſe of a kind of *Dog's bane*, or *Linnæus's Apocynum cannabinum*. The people prepared the ſtalks of this plant, in the ſame manner as we prepare thoſe of hemp or flax. It was ſpun and ſeveral kinds of ſtuffs were woven from it. The ſavages are ſaid to have had the art of making bags, fiſhing-nets, and the like, for many centuries together, before the arrival of the *Europeans*.

I ASKED Mr. *Bartram*, whether he had obſerved in his travels, that the water was fallen, and that the ſea had formerly covered any places which were now land. He told me, that from what he had experienced, he was convinced that the greateſt part of this country, even for ſeveral miles together, had formerly been under water. The reaſons which led him to give credit to this opinion, were the following.

1. ON digging in the blue mountains, which are above three hundred *Engliſh* miles diſtant from the ſea, you find looſe oyſter and other ſorts of ſhells, and they are alſo likewiſe to be met with in the vallies formed by theſe mountains.

2. A VAST quantity of petrified ſhells are found in limeſtone, flint, and ſandſtone, on the ſame mountains. Mr. *Bartram* aſſured me at the ſame time, that it was incredible what quantities of them there were in the different kinds of ſtones of which the mountains conſiſt.

3. THE ſame ſhells are likewiſe dug in great quantity, quite entire and not mouldered, in the provinces of *Virginia* and *Maryland*, as alſo in *Philadelphia* and in *New York*.

4. ON digging wells (not only in *Philadelphia*, but likewiſe in other places) the people

people have met with trees, roots, and leaves of oak, for the greateſt part, not yet rotten, at the depth of eighteen feet.

5. The beſt ſoil and the richeſt mould is to be met with in the vallies hereabouts. Theſe vallies are commonly croſſed by a rivulet or brook. And on their declivity, a mountain commonly riſes, which in thoſe places where the brook paſſes cloſe to it, looks as if it were cut on purpoſe. Mr. *Bartram* believed, that all theſe vallies formerly were lakes; that the water had by degrees hollowed out the mountain, and opened a paſſage for itſelf through it; and that the great quantity of ſlime which is contained in the water, and which had ſubſided to the bottom of the lake, was the rich ſoil which is at preſent in the vallies, and the cauſe of their great fertility. But ſuch vallies and cloven mountains are very frequent in the country, and of this kind is the peculiar gap between two mountains, through which a river takes its courſe on the boundaries of *New York* and *Penſylvania*. The people in a jeſt ſay, that this opening was made by the D—l, as he wanted to go out of *Penſylvania* into *New York*.

6. The whole appearance of the blue mountains, plainly ſhews that the water

formerly covered a part of them. For many are broken in a peculiar manner, but the higheſt are plain.

7. When the ſavages are told, that ſhells are found on theſe high mountains, and that from thence there is reaſon to believe that the ſea muſt formerly have extended to them, and even in part flown over them; they anſwer that this is not new to them, they having a tradition from their anceſtors among them, that the ſea formerly ſurrounded theſe mountains.

8. The water in rivers and brooks likewiſe decreaſes. Mills, which ſixty years ago were built on rivers, and at that time had a ſufficient ſupply of water almoſt all the year long, have at preſent ſo little, that they cannot be uſed, but after a heavy rain, or when the ſnow melts in ſpring. This decreaſe of water in part ariſes from the great quantity of land which is now cultivated, and from the extirpation of great foreſts for that purpoſe.

9. The ſea-ſhore increaſes likewiſe in time. This ariſes from the quantity of ſand continually thrown on ſhore from the bottom of the ſea, by the waves.

Mr. *Bartram* thought that ſome peculiar attention ſhould be paid to another thing relating to theſe obſervations. The ſhells which

which are to be found petrified on the northern mountains, are of ſuch kinds as at preſent are not to be got in the ſea, in the ſame latitude, and they are not fiſhed on the ſhore, till you come to *South Carolina*. Mr. *Bartram* from hence took an occaſion to defend Dr. *Thomas Burnet*'s opinion, that the earth before the deluge was in a different poſition towards the ſun. He likewiſe aſked whether the great bones which are ſometimes found in the ground in *Siberia*, and which are ſuppoſed to be elephant's bones and tuſks, did not confirm this opinion. For at preſent thoſe animals cannot live in ſuch cold countries; but if according to Dr. *Burnet*, the ſun once formed different zones about our earth, from thoſe it now makes, the elephant may eaſily be ſuppoſed to have lived in *Siberia*.* However it

 ſeems

* The bones and tuſks of Elephants are not only found in *Ruſſia*, but alſo in the canton of *Baſel* in *Swiſſerland*, in the dominions of the Marquis of *Bareith* in *Franconia*, and more inſtances are found in the *Protogæa* of the celebrated *Leibnitz*. Lately near the river *Ohio* have been diſcovered, a great number of ſkeletons of Elephants with their tuſks, and very remarkable grinders ſtill ſticking in their jaw bones were ſent to the *Britiſh Muſeum*; the late Dr. *Littleton* Biſhop of *Carliſle*, alſo lodged ſome teeth ſticking in their jawbones in the Muſeum of the Royal Society, which were brought from *Peru*. The rivers *Chatunga* and *Indighirka* in *Siberia*, are remarkable for affording on their banks great quantities of bones and tuſks of Elephants, which being

ſeems that all which we have hitherto mentioned, may have been the effect of different cauſes. To thoſe belong the univerſal deluge, the increaſe of land which is merely

being preſerved there by the great froſt, and in the ſhort ſummer of a few weeks, the rain being rare, theſe tuſks are commonly ſo freſh that they are employed in *Ruſſia*, as common ivory, on account of the great quantity brought from theſe places to *Ruſſia*; ſome of them were eight feet long, and of three hundred pounds weight. There have been found grinders of nine inches diameter. But the *American* grinders of Elephants from near the *Ohio* are yet more remarkable, on account of their being provided with crowns on their tops, ſuch as are only found in the carnivorous animals, and ſuch as feed on hard bones or nuts. Whilſt on the contrary, Elephants at preſent feeding on graſſes and ſoft vegetables have no ſuch crowns at the tops of their grinders. *Livy*, it is true, makes a diſtinction between the *Aſiatic* or *Indian* Elephants, and the *African* ones; and remarks the latter to be inferior to the former in ſize and vigour; but whether the teeth in theſe animals are ſo much different from thoſe of the other variety, has never been attended to. This circumſtance of the difference in the foſſil grinders of Elephants, from thoſe in the living ones, and the place where theſe ſkeletons were found in, viz. *Siberia*, *Germany* and *America*, where at preſent no Elephants are to be met with, opens a wide field to conjectures in regard to the way, by which theſe animals were carried to thoſe ſpots. The flood in the deluge perhaps has carried them thither: nor is it contrary to reaſon, hiſtory or revelation, to believe, theſe ſkeletons to be the remainders of animals, which lived on the ſurface of this globe, anterior to the Moſaic creation, which may be conſidered only as a new modification of the creatures living on this globe, adapted to its preſent ſtate, under which it will remain till circumſtances will make a new change neceſſary, and then our globe will by a new creation or revolution appear more adapted to its ſtate, and be ſtocked with a ſet of animals more ſuitable to that ſtate. Every man

All this might be much easier accounted for by supposing as some great Philosophers have suspected for this 50 or 60 years last past that our Earth has a third motion the variable, of the obliquity of the Ecliptic that is whether the angle between the planes of the Ecliptic & Equator continued always exchangeably the same or is subject to alteration, if the latter all these Appearances of the Globe are easily accounted for by supposing the

ly the work of time, and the changes of the courſe of rivers, which when the ſnow melts and in great floods, leave their firſt beds, and form new ones.

At ſome diſtance from Mr. *Bartram*'s country houſe, a little brook flowed through the wood, and likewiſe ran over a rock. The attentive Mr. *Bartram* here ſhewed me ſeveral little cavities in the rock, and we plainly ſaw that they muſt have been generated in the manner I before deſcribed, that is, by ſuppoſing a pebble to have remained in a cleft of the rock, and to have been turned round by the violence of the water, till it had formed ſuch a cavity in the mountain. For on putting our hands into one of theſe cavities, we found that it contained numerous ſmall pebbles, whoſe ſurface was quite ſmooth and round. And theſe ſtones we found in each of the holes.

Mr. *Bartram* ſhewed me a number of plants

man uſed to philoſophy and reaſoning will find, that this plan gives a grand idea of the Creator, his œconomy and management of the univerſe: and moreover, it is conformable to the meaning of the words of a ſacred writer, who ſays: Pſ. civ. 29. 30. *Thou hideſt thy face and they* (ſmall and great beaſts) *are troubled*; *thou takeſt away their breath, they die, and return to their duſt. Thou ſendeſt forth thy ſpirit, they are created*; *and thou reneweſt the face of the earth.* See Dr. *Hunter*'s remarks on the above-mentioned teeth, in the *Philoſophical Tranſ.* Vol. lviii. F.

digious number of years that the dry land has been formerly seas and what the seas now covers was at that time dry Land, But this progression is so very small that to make the circuit of the Globe it could not be accomplished under Two

plants which he had collected into a herbal on his travels. Among these were the following, which likewise grow in the northern parts of *Europe*, of which he had either got the whole plants, or only broken branches.

1. *Betula alba.* The *common birch tree*, which he had found on the *cats-hills.*

2. *Betula nana.* This species of birch grows in several low places towards the hills.

3. *Comarum palustre*, in the meadows, between the hills in *New Jersey.*

4. *Gentiana lutea*, the great *Gentian*, from the fields near the mountains. It was very like our variety, but had not so many flowers under each leaf.

5. *Linnæa borealis*, from the mountains in *Canada.* It creeps along the ground.

6. *Myrica Gale*, from the neighbourhood of the river *Susquehanna*, where it grows in a wet soil.

7. *Potentilla fruticosa*, from the swampy fields and low meadows, between the river *Delaware*, and the river *New York.*

8. *Trientalis Europæa*, from the *cats-hills.*

9. *Triglochin maritimum*, from the salt springs towards the country of the five nations.

Mr.

Mr. *Bartram* ſhewed me a letter from *Eaſt Jerſey*, in which he got the following account of the diſcovery of an Indian grave. In the *April* of the year 1744, as ſome people were digging a cellar, they came upon a great ſtone, like a tombſtone, which was at laſt got out with great difficulty, and about four feet deeper under it, they met with a large quantity of human bones and a cake of maize. The latter was yet quite untouched, and ſeveral of the people preſent taſted it out of curioſity. From theſe circumſtances it was concluded that this was a grave of a perſon of note among the ſavages. For it is their cuſtom to bury along with the deceaſed, meat and other things which he liked beſt. The ſtone was eight feet long, four feet broad, and even ſome inches more where it was broadeſt, and fifteen inches thick at one end, but only twelve inches at the other end. It conſiſted of the ſame coarſe kind of ſtone, that is to be got in this country. There were no letters nor other characters viſible on it.

The corn which the *Indians* chiefly cultivate is the *Maize*, or *Zea Mays*, *Linn.* They have little corn fields for that purpoſe. But beſides this, they likewiſe plant a great quantity of *Squaſhes*, a ſpecies of pumpions

pumpions or melons, which they have always cultivated, even in the remoteſt ages. The *Europeans* ſettled in *America*, got the ſeeds of this plant, and at preſent their gardens are full of it, the fruit has an agreeable taſte when it is well prepared. They are commonly boiled, then cruſhed (as we are uſed to do with turneps when we make a pulſe of them) and ſome pepper or other ſpice thrown upon them, and the diſh is ready. The Indians likewiſe ſow ſeveral kinds of beans, which for the greateſt part they have got from the *Europeans*. But peaſe which they likewiſe ſow, they have always had amongſt them, before any foreigners came into the country. The ſquaſhes of the Indians, which now are likewiſe cultivated by the *Europeans*, belong to thoſe kinds of gourds (*cucurbita*,) which ripen before any other. They are a very delicious fruit, but will not keep. I have however ſeen them kept till pretty late in winter.

September the 30th. WHEAT and rye are ſown in autumn about this time, and commonly reaped towards the end of *June*, or in the beginning of *July*. Theſe kinds of corn, however, are ſometimes ready to be reaped in the middle of *June*, and there are even examples that they have been mown

mown in the beginning of that month. Barley and oats are ſown in *April*, and they commonly begin to grow ripe towards the end of *July*. Buck-wheat is ſown in the middle or at the end of *July*, and is about this time, or ſomewhat later, ready to be reaped. If it be ſown before the above-mentioned time, as in *May*, or in *June*, it only gives flowers, and little or no corn.

Mr. *Bartram* and other people aſſured me, that moſt of the cows which the *Engliſh* have here, are the offspring of thoſe which they bought of the *Swedes* when they were maſters of the country. The *Engliſh* themſelves are ſaid to have brought over but few. The *Swedes* either brought their cattle from home, or bought them of the *Dutch*, who were then ſettled here.

Near the town, I ſaw an *Ivy* or *Hedera Helix*, planted againſt the wall of a ſtone building, which was ſo covered by the fine green leaves of this plant, as almoſt to conceal the whole. It was doubtleſs brought over from *Europe*, for I have never perceived it any where elſe on my travels through *North-America*. But in its ſtead I have often ſeen wild vines made to run up the walls.

I asked Mr. *Bartram*, whether he had obſerved,

obſerved, that trees and plants decreaſed in proportion as they were brought further to the *North*, as *Cateſby* pretends? He anſwered, that the queſtion ſhould be more limited, and then his opinion would prove the true one. There are ſome trees which grow better in ſouthern countries, and become leſs as you advance to the north. Their ſeeds or berries are ſometimes brought into colder climates by birds and by other accidents. They gradually decreaſe in growth, till at laſt they will not grow at all. On the other hand, there are other trees and herbs which the wiſe Creator deſtined for the northern countries, and they grow there to an amazing ſize. But the further they are tranſplanted to the ſouth, the leſs they grow; till at laſt they degenerate ſo much as not to be able to grow at all. Other plants love a temperate climate, and if they be carried either ſouth or north, they will not ſucceed well, but always decreaſe. Thus for example *Penſylvania* contains ſome trees which grow exceedingly well, but always decreaſe in proportion as they are carried further off either to the north, or to the ſouth.

I AFTERWARDS on my travels, had frequent proofs of this truth. The *Saſſafras*, which grows in *Penſylvania*, under forty

forty deg. of lat. and becomes a pretty tall and thick tree, was ſo little at *Oſwego* and *Fort Nicholſon*, between forty-three and forty-four deg. of lat. that it hardly reached the height of two or four feet, and was ſeldom ſo thick as the little finger of a full grown perſon. This was likewiſe the caſe with the *Tulip tree*. For in *Penſylvania* it grows as high as our talleſt oaks and firs, and its thickneſs is proportionable to its height. But about *Oſwego* it was not above twelve feet high, and no thicker than a man's arm. The *Sugar Maple*, or *Acer ſaccharinum*, is one of the moſt common trees in the woods of *Canada*, and grows very tall. But in the ſouthern provinces, as *New Jerſey* and *Penſylvania*, it only grows on the northern ſide of the blue mountains, and on the ſteep hills which are on the banks of the river, and which are turned to the north. Yet there it does not attain to a third or fourth part of the height which it has in *Canada*. It is needleſs to mention more examples.

October the 1ſt. THE gnats which are very troubleſome at night here, are called *Muſquetoes*. They are exactly like the gnats in *Sweden*, only ſomewhat leſs, and the deſcription which is to be met with in Dr. *Linnæus*'s *Syſtema Naturæ*, and *Fauna Suecica*,

Suecica, fully agrees with them, and they are called by him *Culex pipiens*. In day time or at night they come into the houſes, and when the people are gone to bed they begin their diſagreeable humming, approach always nearer to the bed, and at laſt ſuck up ſo much blood, that they can hardly fly away. Their bite cauſes bliſters in people of a delicate complexion. When the weather has been cool for ſome days, the muſquetoes diſappear. But when it changes again, and eſpecially after a rain, they gather frequently in ſuch quantities about the houſes, that their numbers are aſtoniſhing. The chimneys of the *Engliſh* which have no valves for ſhutting them up, afford the gnats a free entrance into the houſes. In ſultry evenings, they accompany the cattle in great ſwarms, from the woods to the houſes or to town, and when they are drove before the houſes, the gnats fly in wherever they can. In the greateſt heat of ſummer, they are ſo numerous in ſome places, that the air ſeems to be quite full of them, eſpecially near ſwamps and ſtagnant waters, ſuch as the river *Morris* in *New Jerſey*. The inhabitants therefore make a fire before their houſes to expell theſe diſagreeable gueſt by the ſmoak. The old *Swedes* here, ſaid that gnats had formerly been much

much more numerous; that even at preſent they ſwarmed in vaſt quantities on the ſea ſhore near the ſalt water, and that thoſe which troubled us this autumn in *Philadelphia* were of a more venomous kind, than they commonly uſed to be. This laſt quality appeared from the bliſters, which were formed on the ſpots, where the gnats had inſerted their ſting. In *Sweden* I never felt any other inconvenience from their ſting, than a little itching, whilſt they ſucked. But when they ſtung me here at night, my face was ſo disfigured by little red ſpots and bliſters, that I was almoſt aſhamed to ſhew myſelf.

I HAVE already mentioned ſomewhat about the encloſures uſual here; I now add, that moſt of the planks which are put horizontally, and of which the encloſures in the environs of *Philadelphia* chiefly conſiſt, are of the red cedar wood, which is here reckoned more durable than any other. But where this could not be got, either white or black oak ſupplied its place. The people were likewiſe very glad if they could get cedar wood for the poſts, or elſe they took white oak, or cheſnut, as I was told by Mr. *Bartram*. But it ſeems that that kind of wood in general does not keep well in the ground for a conſiderable time. I

ſaw ſome poſts made of cheſnut wood, and put into the ground only the year before, which were already for the greateſt part rotten below.

THE *Saſſafras tree*, or *Laurus Saſſafras*, *Linn.* grows in abundance in the country, and ſtands ſcattered up and down the woods, and near buſhes and encloſures. On old grounds, which are left uncultivated, it is one of the firſt that comes up, and is as plentiful as young birches are on thoſe *Swediſh* fields, which are formed by burning the trees which grew on them.* The ſaſſafras grows in a dry looſe ground, of a pale brick colour, which conſiſts for the greateſt part of ſand, mixed with ſome clay. It ſeems to be but a poor ſoil. The mountains round *Gothenburgh*, in *Sweden*, would afford many places rich enough for the *Saſſafras* to grow in, and I even fear they would be too rich. I here ſaw it both in the woods amidſt other trees, and more frequently by itſelf along the encloſures.

* IN Mr. *Oſbeck*'s Voyage to *China*, Vol. 1. p. 50. in a note, an account is given of this kind of land, which the *Swedes* call *Swedieland*, where it is obſerved, that the trees being burnt, their aſhes afford manure ſufficient for three years, after which they are left uncultivated again, till after twenty or more years, a new generation of trees being produced on them, the country people burn them, and cultivate the country for three years again. F.

ſures. In both it looks equally freſh. I have never ſeen it on wet or low places. The people here gather its flowers, and uſe them inſtead of tea. But the wood itſelf is of no uſe in œconomy; for when it is ſet on fire, it cauſes a continual crackling, without making any good fire. The tree ſpreads its roots very much, and new ſhoots come up from them in ſome places; but theſe ſhoots are not good for tranſplanting, becauſe they have ſo few fibres beſides the root, which connects them to the main ſtem, that they cannot well ſtrike into the ground. If therefore any one would plant *Saſſafras* trees he muſt endeavour to get their berries, which however is difficult, ſince the birds eat them before they are half ripe. The cows are very greedy after the tender new ſhoots, and look for them every where.

The bark of this tree is uſed by the women here in dying worſted, with a fine laſting orange colour, which does not fade in the ſun. They uſe urine inſtead of alum in dying, and boil the dye in a braſs boiler, becauſe in an iron veſſel it does not yield ſo fine a colour. A woman in *Virginia* has ſucceſsfully employed the berries of the Saſſafras againſt a great pain in one of her feet, which for three years together ſhe had to ſuch a degree, that it almoſt hindered

her from walking. She was adviſed to broil the berries of ſaſſafras, and to rub the painful parts of her foot with the oil, which by this means would be got from the berries. She did ſo, but at the ſame time it made her vomit; yet this was not ſufficient to keep her from following the preſcription three times more, though as often as ſhe made uſe thereof, it always had the ſame effect. However ſhe was entirely freed from that pain, and perfectly recovered.

A BLACK *Woodpecker* with a red head, or the *Picus pileatus*, *Linn.* is frequent in the *Penſylvanian* foreſts, and ſtays the winter, as I know from my own experience. It is reckoned among thoſe birds which deſtroy the maize; becauſe it ſettles on the ripe ears, and deſtroys them with its bill. The *Swedes* call it *Tillkroka*, but all other woodpeckers, thoſe with gold yellow wings excepted, are called *Hackſpickar* in the *Swediſh* language. I intend to deſcribe them altogether more exactly in a particular work. I only obſerve here, that almoſt all the different ſpecies of woodpeckers are very noxious to the maize, when it begins to ripen: for by picking holes in the membrane round the ear, the rain gets into it, and cauſes the ear with all the corn it contains to rot.

October

October the 3d. In the morning I ſet out for *Wilmington*, which was formerly called *Chriſtina* by the *Swedes*, and is thirty *Engliſh* miles to the ſouth weſt of *Philadelphia*. Three miles behind *Philadelphia* I paſſed the river *Skulkill* in a ferry, beyond which the country appears almoſt a continual chain of mountains and vallies. The mountains have an eaſy ſlope on all ſides, and the vallies are commonly croſſed by brooks, with cryſtal ſtreams. The greater part of the country is covered with ſeveral kinds of deciduous trees; for I ſcarcely ſaw a ſingle tree of the fir kind, if I except a few red cedars. The foreſt was high, but open below, ſo that it left a free proſpect to the eye, and no under-wood obſtructed the paſſage between the trees. It would have been eaſy in ſome places to have gone under the branches with a carriage for a quarter of a mile, the trees ſtanding at great diſtances from each other, and the ground being very level. In ſome places little glades opened, which were either meadows, paſtures, or corn-fields; of which latter ſome were cultivated and others not. In a few places, ſeveral houſes were built cloſe to each other. But for the greateſt part they were ſingle. In part of the fields the wheat was already ſown, in the *Engliſh*

manner without trenches, but with furrows pretty close together. I sometimes saw the country people very busy in sowing their rye. Near every farm-house was a little field with maize. The inhabitants hereabouts were commonly either *English* or *Swedes*.

All the day long I saw a continual variety of trees; walnut trees of different sorts, which were all full of nuts; chesnut trees quite covered with fine chesnuts; mulberries, sassafras, liquidambar, tulip trees, and many others.

Several species of vines grew wild hereabouts. They run up to the summits of the trees, their clusters of grapes and their leaves covering the stems. I even saw some young oaks five or six fathoms high, whose tops were crowned with vines. The ground is that which is so common hereabouts, which I have already described, viz. a clay mixed with a great quantity of sand, and covered with a rich soil or vegetable earth. The vines are principally seen on trees which stand single in corn-fields, and at the end of woods, where the meadows, pastures, and fields begin, and likewise along the enclosures, where they cling with their tendrils round the trees which stand there. The lower parts of the plant are full

full of grapes, which hang below the leaves, and were now almoſt ripe, and had a pleaſant ſouriſh taſte. The country people gather them in great quantities, and ſell them in the town. They are eaten without further preparation, and commonly people are preſented with them when they come to pay a viſit.

The ſoil does not ſeem to be deep hereabouts; for the upper black ſtratum is hardly two inches. This I had an occaſion to ſee both in ſuch places where the ground is dug up, and in ſuch where the water, during heavy ſhowers of rain, has made cuts, which are pretty numerous here. The upper ſoil has a dark colour, and the next a pale colour like bricks. I have obſerved every where in *America*, that the depth of the upper ſoil does not by far agree with the computation of ſome people, though we can almoſt be ſure, that in ſome places it never was ſtirred ſince the deluge. I ſhall be more particular in this reſpect afterwards.*

* The learned Dr. *Wallerius*, in his Mineralogy, §. 8. in the note to the article, *Humus communis atra*, mentions that ſome people were of opinion, that the *mould* of our globe increaſed gradually from the yearly putrefaction of plants and their parts, eſpecially in ſuch places as had been uncultivated ever ſince the deluge, and that thus in a hundred years, half

THE *Datura Stramonium*, or *Thorn Apple*, grows in great quantities near all the villages. Its height is different according to the ſoil it is in. For in a rich ſoil it grows

half an inch of mould was produced. But he obſerves in the ſame time, that this obſervation was not at all exact; for as the common mould ſeldom exceeds a foot, it muſt from thence follow, that ſince the deluge no more than 2400 years were elapſed, though the ſcripture chronology reckons upwards of 4000 years ſince that event: beſides this, he remarks, that mould always becomes more dry and compreſſed, where it is out of the reach of rain and ſnow; and where it is expoſed to rain, it is carried off to lower places, and therefore increaſes and decreaſes according to the qualities of its local ſituation. Moreover, vegetables it is known proſper the beſt where mould is found. As the ſurface of our globe has been covered with vegetables ſince the deluge, they muſt have had a mould to grow in ever ſince that time; conſequently it is highly probable, that there muſt have been a mould covering the ſurface of our globe, ever ſince the firſt origin. I ſhould be led by ſome other conſiderations, to doubt of the infallibility of this rule for the increaſe of mould. In *Ruſſia*, on this ſide the river *Volga*, are high and extenſive plains, which have been uncultivated ever ſince the deluge, for we know from hiſtory, that the *Scythians*, *Sarmatians*, *Huns*, *Chazars*, and *Mogols*, were ſucceſſively the maſters of theſe vaſt countries, and were altogether nomadic nations, who lived without agriculture; the country has been without wood ſince time immemorial, nor could there even ſpring up any wood whatſoever, ſince its rambling poſſeſſors every ſpring ſet fire to the old dry graſs, in order to make room for the new graſs, which in the latter end of *May*, I found come up very near to my waiſt. And theſe vaſt, deſart plains, I ſaw every where covered with at leaſt two feet mould; nay, in ſome places it amounted to four feet; this would give according to the former rule of half an inch per century, 4800 years, in the firſt inſtance, and in the ſecond, 9600 years, and therefore ſhews that this rule for calculating the increaſe of mould, is very precarious. The chemical analyſis

grows eight or ten feet high, but in a hard and poor ground, it will ſeldom come up to ſix inches. This *Datura*, together with the *Phytolacca*, or *American Nightſhade*, grow here in thoſe places near the gardens, houſes,

analyſis of plants, ſhews that they conſiſt of water, earth, acid, alkali, oil, and an inflammable principle, independent of the laſt ſubſtance, and called by a late *German* chemiſt the *cauſtic*: theſe ſubſtances muſt enter yearly the new plants, and make their ſubſtance, and are as it were regenerated in theſe new plants, after being ſet at liberty from the ſtructure of the laſt year's plants by putrefaction, or by fire. Mould chemically examined, has the ſame analogous parts. Acid and cauſtic are plentifully contained in the common air, and may alſo eaſily be reſtored to the mould, and thus circulate through a new ſyſtem of plants. Water comes likewiſe from rain and ſnow, out of our atmoſphere: alkaline and oily particles, or a kind of *ſoap*, are the only things wanting, which when added with the former to any ſubtle earth, will make a good mould, and theſe are produced by putrefaction or fire, from vegetable and animal ſubſtances, and are the great promoters of vegetation.

But the great queſtion is, from whence theſe various ſubſtances neceſſary for vegetation originally came? To believe they are produced from putrified vegetables is begging the queſtion, and making a *circulus vitioſus* in the argument. There is therefore no evaſion; they were certainly produced by the great Creator of the univerſe, and endowed with ſuch qualities, as make them capable of producing in various mixtures new bodies; and when they are introduced by moiſture, into the firſt ſtamina of a plant, or a ſeed, they expand theſe ſtamina, and conſtitute a new being, capable of affording food to the animal creation. It is evident, Mr. *Kalm* hinted at the above-mentioned opinion of the increaſe of mould, and this gave me an opportunity of confirming his argument, and of ſtating fairly the great queſtion on which agriculture, the moſt neceſſary branch of human arts depends. F.

houſes, and roads, which in *Sweden* are covered with nettles and gooſe-foot, which *European* plants are very ſcarce in *America*. But the *Datura* and *Phytolacca* are the worſt weeds here, nobody knowing any particular uſe of them.

TURNEP-FIELDS are ſometimes to be ſeen. In the middle of the highroad I perceived a dead black ſnake, which was four feet ſix inches long, and an inch and a half in thickneſs. It belonged to the viper kind.

LATE at night a great Halo appeared round the moon. The people ſaid that it prognoſticated either a ſtorm, or rain, or both together. The ſmaller the ring is, or the nearer it comes to the moon, the ſooner this weather ſets in. But this time neither of theſe changes happened, and the halo had foretold a coldneſs in the air.

I SAW to-day the *Chermes* of the alder *(Chermes Alni)* in great abundance on the branches of that tree, which for that reaſon looks quite white, and at a diſtance appears as it were covered with mould.

October the 4th. I continued my journey early in the morning, and the country ſtill had the ſame appearance as I went on. It was a continual chain of pretty high hills, with an eaſy aſcent on all ſides, and of

vallies

vallies between them. The ſoil conſiſted of a brick coloured mould, mixed with clay, and a few pebbles, I rode ſometimes through woods of ſeveral ſorts of trees, and ſometimes amidſt little fields, which had been cleared of the wood, and which at preſent were corn-fields, meadows, and paſtures. The farm-houſes ſtood ſingle, ſometimes near the roads, and ſometimes at a little diſtance from them, ſo that the ſpace between the road and the houſes was taken up with little fields and meadows. Some of the houſes were built of ſtone, two ſtories high, and covered with ſhingles of the white cedar. But moſt of the houſes were wooden, and the crevices ſtopped up with clay, inſtead of moſs, which we make uſe of for that purpoſe. No valves were to be met with in the chimneys, and the people even did not know what I meant by them. The ovens were commonly built up at ſome diſtance from the houſes, and were either under a roof, or without any covering againſt the weather. The fields bore partly buck-wheat, which was not yet cut, partly maize, and partly wheat, which was but lately ſown; but ſometimes they lay fallow. The vines climbed to the top of ſeveral trees, and hung down again on both ſides. Other trees again were ſurrounded by the ivy *(Hedera quinquefolia)* which with

with the ſame flexibility aſcended to a great height. The *Smilax laurifolia* always joined with the ivy, and together with it twiſted itſelf round the trees. The leaves of the ivy were at this time commonly reddiſh, but thoſe of the vine were ſtill quite green. The trees which were ſurrounded with them, looked at a diſtance like thoſe which are covered with hops in our country, (and on ſeeing them from afar off, one might expect to find wild hops climbing upon the trees.) Walnut and cheſnut trees were common near encloſures, in woods, and on hills, and at preſent were loaded with their fruit. The perſimon was likewiſe plentiful near the roads, and in the woods. It had a great quantity of fruit, but they were not yet fit for eating, ſince the froſt had not ſoftened them. At ſome diſtance from *Wilmington*, I paſſed a bridge over a little river, which falls north into the *Delaware*. The rider pays here twopence toll for himſelf and his horſe.

Towards noon I arrived at *Wilmington*.

Wilmington is a little town, about thirty *Engliſh* miles ſouth-weſt from *Philadelphia*. It was founded in the year 1733. Part of it ſtands upon the grounds belonging to the *Swediſh* church, which annually receives certain rents, out of which they pay

pay the miniſter's ſalary, and employ the reſt for other uſes. The houſes are built of ſtone, and look very pretty; yet they are not built cloſe together, but large open places are left between them. The quakers have a meeting-houſe in this town. The *Swediſh* church, which I intend to mention in the ſequel, is half a mile out of town eaſtwards. The parſonage is under the ſame roof with the church. A little river called *Chriſtina-kill* paſſes by the town, and from thence falls into the *Delaware*. By following its banks one goes three miles before one reaches the *Delaware*. The river is ſaid to be ſufficiently deep, ſo that the greateſt veſſel may come quite up to the town: for at its mouth or juncture with the *Delaware*, it is ſhalloweſt, and yet its depth even there when the water is loweſt, is from two fathoms to two and a half. But as you go higher its depth encreaſes to three, three and a half, and even four fathoms. The largeſt ſhips therefore may ſafely, and with their full cargoes come to, and from the town with the tide. From *Wilmington*, you have a fine proſpect of a great part of the river *Delaware*, and the ſhips ſailing on it. On both ſides of the river *Chriſtina-kill*, almoſt from the place where the redoubt is built to its juncture with the *Delaware*, are low meadows, which afford a great quantity of hay

to

to the inhabitants. The town carries on a conſiderable trade, and would have been more enlarged, if *Philadelphia* and *Newcaſtle*, which are both towns of a more ancient date, were not ſo near on both ſides of it.

The *Redoubt* upon the river *Chriſtinakill*, was erected this ſummer, when it was known that the *French* and *Spaniſh* privateers intended to ſail up the river, and to attempt a landing. It ſtands, according to the accounts of the late Rev. Mr. *Tranberg*, on the ſame ſpot, where the *Swedes* had built theirs. It is remarkable, that on working in the ground this ſummer, to make this redoubt, an old *Swediſh* ſilver coin of Queen *Chriſtina*, not quite ſo big as a ſhilling was found at the depth of a yard, among ſome other things. The Rev. Mr. *Tranberg* afterwards preſented me with it. On one ſide were the arms of the houſe of *Waſa* with the inſcription: CHRISTINA. D. G. DE. RE. SVE. that is, *Chriſtina, by the grace of God, elected Queen of Sweden*; and near this the year of our Lord 1633. On the reverſe were theſe words: MONETA NOVA REGNI SVEC. or, *a new coin of the kingdom of Sweden*. At the ſame time a number of old iron tools, ſuch as axes, ſhovels, and the like, were diſcovered. The redoubt, that is now erected, conſiſts

of

of bulwarks of planks, with a rampart on the outſide. Near it is the powder magazine, in a vault built of bricks. At the erection of this little fortification it was remarkable, that the quakers, whoſe tenets reject even defenſive war, were as buſy as the other people in building it. For the fear of being every moment ſuddenly attacked by privateers, conquered all other thoughts. Many of them ſcrupled to put their own hands to the work; but forwarded it by ſupplies of money, and by getting ready every thing, which was neceſſary.

October the 5th. It was my deſign to croſs the *Delaware*, and to get into *New Jerſey* with a view to get acquainted with the country; but as there was no ferry here to bring my horſe over, I ſet out on my return to *Philadelphia*. I partly went along the high road, and partly deviated on one or the other ſide of it, in order to take more exact obſervations of the country, and of its natural hiſtory.

The maize, was ſown in ſeveral places. In ſome its ſtalks were cut ſomewhat below the ear, dried and put up in narrow high ſtacks, in order to keep them as a food for the cattle in winter. The lower part of the ſtalk had likewiſe leaves, but as they commonly dry of themſelves, the people do not like to feed

feed the cattle with them, all their flavour being loſt. But the upper ones are cut, whilſt they are yet green.

THE vallies between the hills commonly contain brooks: but they are not very broad, and require no bridges, ſo that carriages and horſe can eaſily paſs through them; for the water is ſeldom above ſix inches deep.

THE leaves of moſt trees were yet quite green, ſuch as thoſe of oaks, cheſnut trees, black walnut trees, hiccory, tulip trees, and ſaſſafras. The two latter ſpecies are found in plenty on the ſides of the little woods, on hills, on the fallow fields, near hedges, and on the road. The perſimon likewiſe had ſtill its leaves; however ſome trees of this kind had dropt them. The leaves of the *American* bramble were at preſent almoſt entirely red, though ſome of theſe buſhes yet retained a lively green in the leaves. The *Cornelian* cherry likewiſe had already a mixture of brown and pale leaves. The leaves of the red maple were alſo red.

I CONTINUED my journey to *Chicheſter*, a borough upon the *Delaware*, where travellers paſs the river in a ferry. They build here every year a number of ſmall ſhips for ſale. From an iron work which lies

lies higher in the country, they carry iron bars to this place, and ſhip them.

CANOES are boats made of one piece of wood, and are much in uſe with the farmers, and other people upon the *Delaware*, and ſome little rivers. For that purpoſe a very thick trunk of a tree is hollowed out; the red juniper or red cedar tree, the white cedar, the cheſnut tree, the white oak, and the tulip tree are commonly made uſe of for this purpoſe. The canoes made of red and white cedar are reckoned the beſt, becauſe they ſwim very light upon the water, and laſt twenty years together. But of theſe, the red cedar canoes are moſt preferable. Thoſe made of cheſnut trees will likewiſe laſt for a good while. But thoſe of white oak are hardly ſerviceable above ſix years, and alſo ſwim deep, becauſe they are ſo heavy. The *Liquidambar tree*, or *Liquidambar ſtyraciflua, Linn.* is big enough but unfit for making canoes, becauſe it imbibes the water. The canoes which are made of the tulip tree, ſcarce laſt ſo long as thoſe of white oak. The ſize of the canoes is different, according to the purpoſes they are deſtined for. They can carry ſix perſons, who however, muſt by no means be unruly, but ſit at the bottom of the canoe in the quieteſt manner

poſſible, leſt the boat overſet. The *Swedes* in *Penſylvania* and *New Jerſey* near the rivers, have no other boats to go to *Philadelphia* in, which they commonly do twice a week on the market days, though they be ſeveral miles diſtant from the town, and meet ſometimes with ſevere ſtorms; yet misfortunes from the overſetting, &c. of theſe canoes are ſeldom heard of, though they might well be expected on account of the ſmall ſize of this kind of boats. However a great deal of attention and care is neceſſary in managing the canoes, when the wind is ſomewhat violent; for they are narrow, round below, have no keel, and therefore may eaſily be overſet. Accordingly when the wind is more briſk than ordinary, the people make for the land.

The common garden creſſes grow in ſeveral places on the roads about *Chicheſter*, and undoubtedly come from the ſeeds, which were by chance carried out of the many gardens about that town.

The *American* brambles are here in great plenty. When a field is left uncultivated, they are the firſt plants that appear on it; and I frequently obſerved them in ſuch fields as are annually ploughed, and have corn ſown on them. For when theſe buſhes are once rooted, they are not eaſily extirpated.

tirpated. Such a buſh runs out tendrils ſometimes four fathoms off its root, and then throws a new root, ſo that on pulling it up, you meet with roots on both ends. On ſome old grounds, which had long been uncultivated, there were ſo many buſhes of this kind, that it was very troubleſome and dangerous walking in them. A wine is made of the berries, as I have already mentioned. The berries are likewiſe eaten when they are ripe, and taſte well. No other uſe is made of them.

October the 6th. The *Chenopodium anthelminticum* is very plentiful on the road, and on the banks of the river, but chiefly in dry places in a looſe ſandy ſoil. The *Engliſh* who are ſettled here, call it *Worm-ſeed* and *Jeruſalem Oak*. It has a diſagreeable ſcent. In *Penſylvania* and *New Jerſey* its ſeeds are given to children, againſt the worms, and for that purpoſe they are excellent. The plant itſelf is ſpontaneous in both provinces.

The environs of *Chicheſter*, contain many gardens, which are full of apple trees, ſinking under the weight of innumerable apples. Moſt of them are winter fruit, and therefore were yet quite four. Each farm has a garden, and ſo has each houſe of the better ſort. The extent of theſe gardens is

likewiſe not inconſiderable, and therefore affords the poſſeſſor all the year long, great ſupplies in his houſe-keeping, both for eating and drinking. I frequently was ſurprized at the prudence of the inhabitants of this country. As ſoon as one has bought a piece of ground, which is neither built upon nor ſown, his firſt care is to get young apple trees, and to make a garden. He next proceeds to build his houſe, and laſtly prepares the uncultivated ground to receive corn. For it is well known that the trees require many years before they arrive to perfection, and this makes it neceſſary to plant them firſt. I now perceived near the farms, mills, wheels, and other inſtruments which are made uſe of in cruſhing the apples, in order to prepare cyder from them afterwards.

From *Chicheſter* I went on towards *Philadelphia*. The oaks were the moſt plentiful trees in the wood. But there were ſeveral ſpecies of them, all different from the *European* ones. The ſwine now went about in great herds in the oak woods, where they fed upon the acorns which fell in great abundance from the trees. Each hog had a wooden triangular yoke about its neck, by which it was hindered from penetrating through the holes in the encloſures; and for

for this reaſon, the encloſures are made very ſlender, and eaſy to put up, and do not require much wood. No other encloſures are in uſe, but thoſe which are ſo like ſheep hurdles. A number of ſquirrels were in the oak woods, partly running on the ground, and partly leaping from one branch to another; and at this time they chiefly fed upon acorns.

I SELDOM ſaw beach trees; but I found them quite the ſame with the *European* ones. Their wood is reckoned very good for making joiner's planes of.

I DO not remember ſeeing any other than the *black Ants*, or *Formica nigra* in *Penſylvania*. They are as black as a coal, and of two ſorts, ſome very little, like the leaſt of our ants, and others of the ſize of our common reddiſh ants. I have not yet obſerved any hills of theirs, but only ſeen ſome running about ſingly. In other parts of *America*, I have likewiſe found other ſpecies of ants, as I intend to remark in the ſequel.

THE *common Privet*, or *Liguſtrum vulgare*, is made uſe of in many places, as a hedge round corn-fields and gardens, and on my whole voyage, I did not ſee that any other trees were made uſe of for this purpoſe, though the *Engliſhmen* here, well know that the hawthorn makes a much bet-

ter hedge. The privet hedges grow very thick and close, but having no spines, the hogs, and even other animals break easily through them; and when they have once made a hole, it requires a long while before it grows up again. But when the hedges consist of spinose bushes, the cattle will hardly attempt to get through them.

About noon I came through *Chester*, a little market-town which lies on the *Delaware*. A rivulet coming down out of the country, passes through this place, and discharges itself into the *Delaware*. There is a bridge over it. The houses stand dispersed. Most of them are built of stone, and two or three stories high; some are however made of wood. In the town is a church, and a market-place.

Wheat was now sown every where. In some places it was already green, having been sown four weeks before. The wheat fields were made in the *English* manner, having no ditches in them, but numerous furrows for draining the water, at the distance of four or six foot from one another. Great stumps of the trees which had been cut down, are every where seen on the fields, and this shews that the country has been but lately cultivated.

The roots of the trees do not go deep into

into the ground, but ſpread horizontally. I had opportunities of obſerving this in ſeveral places where the trees were dug up; for I ſeldom ſaw one, whoſe roots went above a foot deep into the ground, though it was a looſe ſoil.

About two *Engliſh* miles behind *Cheſter*, I paſſed by an iron forge, which was to the right hand by the road ſide. It belonged to two brothers, as I was told. The ore however is not dug here, but thirty or forty miles from hence, where it is firſt melted in the oven, and then carried to this place. The bellows were made of leather, and both they and the hammers, and even the hearth, but ſmall in proportion to ours. All the machines were worked by water. The iron was wrought into bars.

To day I remarked, as I have ſince frequently ſeen on my travels in this country, that horſes are very greedy of apples. When they are let into an orchard to feed upon the graſs, if there are any apples on the ground, they frequently leave the freſh green graſs, and eat the apples, which, however, are not reckoned a good food for them; and beſides that, it is too expenſive.

The *red Maple*, or *Acer rubrum*, is plentiful in theſe places. Its proper ſituations

are chiefly ſwampy, wet places, in which the alder commonly is its companion. Out of its wood they make plates, ſpinning-wheels, rolls, feet for chairs and beds, and all ſorts of work. With the bark, they dye both worſted and linnen, giving it a dark blue colour. For that purpoſe it is firſt boiled in water; and ſome copperas, ſuch as the hat-makers and ſhoe-makers commonly make uſe of, is added, before the ſtuff (which is to be dyed) is put into the boiler. This bark likewiſe affords a good black ink. When the tree is felled early in ſpring, a ſweet juice runs out of it, like that which runs out of our birches. This juice they do not make any uſe of here; but in *Canada*, they make both treacle and ſugar of it. Here is a variety of this tree which they call the *curled Maple*, the wood being as it were marbled within; it is much uſed in all kinds of joiner's work, and the utenſils made of this wood, are preferable to thoſe made of any other ſort of wood in the country, and are much dearer than thoſe made of the wood of the wild cherry trees *(Prunus Virginiana)* or of black walnut trees. But the moſt valuable utenſils were thoſe made of *curled black walnut*, for that is an exceſſive ſcarce kind of wood. The curled maple was likewiſe very uncom-

common, and you frequently find trees, whoſe outſides are marbled, but their inſide not. The tree is therefore cut very deep before it is felled, to ſee whether it has veins in every part.

In the evening I reached *Philadelphia*.

October the 7th. In the morning we croſſed the *Delaware* in a boat to the other ſide which belongs to *New Jerſey*, each perſon paying fourpence for his paſſage. The country here is very different from that in *Penſylvania*; for here the ground is almoſt mere ſand, but in the other province it is mixed with a good deal of clay, and this makes the ground pretty rich. The diſcoveries which I made to day of inſects and plants, I intend to mention in another work.

A soil like this in *New Jerſey*, one might be led to think, could produce nothing becauſe it is ſo dry and poor. Yet the maize which is planted on it grows extremely well, and we ſaw many fields filled with it. The earth is of that kind in which tobacco commonly ſucceeds, but it is not near ſo rich. The ſtalks of maize are commonly eight feet high, more or leſs, and are full of leaves. The maize is planted as uſual in rows, in little ſquares, ſo that there is a ſpace of five feet and ſix inches

inches between each ſquare, both in length and breadth; on each of theſe little hills three or four ſtalks come up, which were not yet cut for the cattle; each ſtalk again has from one to four ears, which are large and full of corn. A ſandy ground could never have been better employed. In ſome places the ground between the maize is ploughed, and rye ſown in it, ſo that when the maize is cut, the rye remains upon the field.

We frequently ſaw *Aſparagus* growing near the encloſures, in a looſe ſoil, on uncultivated ſandy fields. It is likewiſe plentiful between the maize, and was at preſent full of berries, but I cannot tell whether the ſeeds are carried by the wind to the places where I ſaw them; it is however certain, that I have likewiſe ſeen it growing wild in other parts of *America*.

The *Worm-ſeed*, is likewiſe plentiful on the roads, in a ſandy ground ſuch as that near the ferry oppoſite to *Philadelphia*. I have already mentioned that it is given to children, as a remedy to carry off the worms. It is then put into brandy, and when it has been in it for one hour, it is taken out again, dried and given to the children, either in beer ſweetened with treacle, or in any other liquor. Its effects

are

are talked of differently. Some people ſay it kills the worms, others again pretend that it forwards their encreaſe. But I know by my own experience, that this worm-ſeed has had very good effects upon children.

The *Purſlain*, which we cultivate in our gardens, grows wild in great abundance in the looſe ſoil amongſt the maize. It was there creeping on the ground, and its ſtalks were pretty thick and ſucculent; which circumſtance very juſtly gave reaſon to wonder from whence it could get juice ſufficient to ſupply it in ſuch a dry ground. It is to be found plentiful in ſuch ſoil, in other places of this country.

The *Bidens bipinnata*, is here called *Spaniſh Needles*. It grows ſingle about farm houſes, near roads, pales and along the hedges. It was yet partly in flower; but for the greateſt part it was already out of bloſſom. When its ſeeds are ripe it is very diſagreeable walking where it grows. For they ſtick to the cloaths and make them black; and it is difficult to diſcharge the black ſpots which they occaſion. Each ſeed has three ſpines at its extremity; and each of theſe again is full of numerous little hooks, by which the ſeed faſtens itſelf to the cloaths.

In the woods and along the hedges in this

this neighbourhood, ſome ſingle *red Ants, (Formica rubra)* crept about, and their antennæ or feel-horns were as long as their bodies.

Towards night we returned to *Philadelphia.*

October the 8th. The ſhore of *Penſylvania* has a great quantity of the fineſt oyſters. About this time the people began to bring them to *Philadelphia* for ſale. They come from that part of the ſhore, which is near the mouth of the river *Delaware.* They are reckoned as good as the *New York* oyſters, of which I ſhall make more particular mention afterwards. However I thought that this latter ſort of oyſters was generally larger, fatter and more palatable. It is remarkable that they commonly became palatable at the time when the agues had left off their fury. Some men went with whole carts full of oyſters, crying them about the ſtreets; this is unuſual here when any thing elſe is to be ſold, but in *London* it is very common. The oyſter ſhells are thrown away, though formerly a lime was burnt from them, which has been found unneceſſary, there being ſtones for burning of lime in this neighbourhood, and the lime of oyſter ſhells not being as good as this other lime. The people ſhew-

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ed me ſome houſes in this town which were built of ſtone, and to the maſon work of which the lime of oyſter ſhells had been employed. The walls of theſe houſes were always ſo wet two or three days before a rain, that great drops of water could plainly be perceived on them; and thus they were as good as Hygrometers.* Several people who had lived in this kind of houſes complained of theſe inconveniences.

October the 9th. PEASE are not much cultivated in *Penſylvania* at preſent, though formerly, according to the accounts of ſome old *Swedes*, every farmer had a little field with peaſe. In *New Jerſey* and the ſouthern parts of *New York*, peaſe are likewiſe not ſo much cultivated as they uſed to be. But in the northern parts of *New York*, or about *Albany*, and in all the parts of *Canada* which are inhabited by the *French*, the people ſow great quantities, and have a plentiful crop. In the former colonies, a little deſpicable inſect has obliged the people to give up ſo uſeful a part of agriculture. This little inſect was formerly little

* As the ſhells of oyſters are a marine animal production, and their cavities are full of particles of ſea-water, the moiſture of it flies off, leaving behind its ſalt; when the ſhells are burnt, and the lime is ſlacked, the ſalt mixes with the lime: and though the mortar of ſuch a lime grows ever ſo dry, the particles of ſalt immediately attract the moiſture of the air, and cauſe that dampneſs complained of here. F.

little known, but a few years ago it multiplied exceſſively. It couples in ſummer, about the time when the peaſe are in bloſſom, and then depoſites an egg into almoſt every one of the little peaſe. When the peaſe are ripe, their outward appearance does not diſcover the worm, which, however, is found within, when it is cut. This worm lies in the pea, if it is not ſtirred during all the winter, and part of the ſpring, and in that ſpace of time conſumes the greateſt part of the inſide of the pea: In ſpring therefore little more than the mere thin outward ſkin is left. This worm at laſt changes into an inſect, of the coleoptera claſs, and in that ſtate creeps through a hole of its own making in the huſk, and flies off, in order to look for new fields of peaſe, in which it may couple with its cogeneric inſects, and provide food ſufficient for its poſterity.

This noxious inſect has ſpread from *Penſylvania* to the north. For the country of *New York*, where it is common at preſent, has not been plagued with it above twelve or fifteen years ago; and before that time the people ſowed peaſe every year without any inconvenience, and had excellent crops. But by degrees theſe little enemies came in ſuch numbers, that the inhabitants

inhabitants were forced to leave off ſowing of peaſe. The people complained of this in ſeveral places. The country people about *Albany* have yet the pleaſure to ſee their fields of peaſe not infected by theſe beetles, but are always afraid of their approach; as it has been obſerved they come every year nearer to that province.

I KNOW not whether this inſect would live in *Europe*, and I ſhould think our *Swediſh* winters muſt kill the worm, even if it be ever ſo deeply incloſed in the pea; notwithſtanding it is often as cold in *New York* (where this inſect is ſo abundant) as in our country, yet it continues to multiply here every year, and proceeds always farther to the north. I was very near bringing ſome of theſe vermin into *Europe*, without knowing of it. At my departure from *America*, I took ſome ſweet peas with me in a paper, and they were at that time quite freſh and green. But on opening the paper after my arrival at *Stockholm*, on *Auguſt* the 1ſt. 1751; I found all the peas hollow, and the head of an inſect peeping out of each. Some of theſe inſects even crept out, in order to try the weather of this new climate; but I made haſte, to ſhut the paper again, in order to prevent the ſpreading of this noxious

noxious insect.* I own, that when I first perceived them, I was more frightened than I should have been at the sight of a viper. For I at once had a full view of the whole damage, which my dear country would have suffered, if only two or three of these noxious insects had escaped me. The posterity of many families, and even the inhabitants of whole provinces, would have had sufficient reason to detest me as the cause of so great a calamity. I afterwards sent some of them, though well secured, to count *Tessin*, and to Dr. *Linnæus*, together with an account of their destructive qualities. Dr. *Linnæus* has already inserted a description of them in an Academical Dissertation, which has been drawn up under his presidency, and treats of the damages made by insects.† He there calls this insect the *Bruchus* of *North-America*.‡ It was

* Though Mr. *Kalm* has so carefully avoided peopling *Europe* with this insect, yet Dr. *Linnæus* assures us in his *Systema Naturæ*, that the southern countries of *Europe* are already infested with it; *Scopoli* mentions it among his *Insecta Carniolica* p. 63. and *Geoffroy* among his *Parisian Insects*, Vol. 1. p. 267. t. 4. f. 9. has given a fine figure of it. F.

† Diss. de Noxa Insectorum, Amœn. Acad. Vol. 3. p. 347.

‡ In his Systema Naturæ, he calls it *Bruchus Pisi*, or the Pease Beetle; and says that the *Gracula Quiscula*, or *Purple daw* of *Catesby*, is the greatest destroyer of them, and though this

was very peculiar that every pea in the paper was eaten without exception.

When the inhabitants of *Penſylvania* ſow peaſe procured from abroad, they are not commonly attacked by theſe inſects for the firſt year; but in the next they take poſſeſſion of the pea. It is greatly to be wiſhed that none of the ſhips which annually depart from *New York* or *Penſylvania*, may bring them into the *European* countries. From hence the power of a ſingle deſpicable inſect will plainly appear; as alſo, that the ſtudy of the œconomy and of the qualities of inſects, is not to be looked upon as a mere paſtime and uſeleſs employment.*

The *Rhus radicans* is a ſhrub or tree which grows abundantly in this country, and has in common with the ivy, called *Hedera arborea*, the quality of not growing without the ſupport either of a tree, a wall, or a hedge. I have ſeen it climbing to the very top of high trees in the

 woods,

this bird has been proſcribed by the legiſlature of *Penſylvania*, *New Jerſey*, and *New England* as a maize-thief, they feel however the imprudence of extirpating this bird; for a quantity of worms which formerly were eaten by theſe birds deſtroy their meadows at preſent. F.

* If the peaſe were ſteeped before they are ſown, in a lie of lime water and ſome diſſolved arſenic, the pupa or aurelia of the inſect would be killed. F.

woods, and its branches ſhoot out every where little roots, which faſten upon the tree and as it were enter into it. When the ſtem is cut, it emits a pale brown ſap of a diſagreeable ſcent. This ſap is ſo ſharp that the letters and characters made upon linnen with it, cannot be got out again, but grow blacker the more the cloath is waſhed. Boys commonly marked their names on their linnen with this juice. If you write with it on paper, the letters never go out, but grow blacker from time to time.

This ſpecies of *Sumach* has the ſame noxious qualities as the poiſonous ſumach, or *Poiſon-tree*, which I have above deſcribed, being poiſonous to ſome people, though not to every one. Therefore all that has been ſaid of the poiſon tree is likewiſe applicable to this; excepting that the former has the ſtronger poiſon. However I have ſeen people who have been as much ſwelled from the noxious exhalations of the latter, as they could have been from thoſe of the former. I likewiſe know, that of two ſiſters, the one could manage the tree without being affected by its venom, though the other immediately felt it as ſoon as the exhalations of the tree came near her, or when ever ſhe came a yard too near the tree,

tree, and even when ſhe ſtood in the way of the wind, which blew directly from this ſhrub. But upon me this ſpecies of ſumach has never exherted its power, though I made above a hundred experiments upon myſelf with the greateſt ſtems, and the juice once ſquirted into my eye, without doing me any harm. On another perſon's hand which I had covered very thick with it, the ſkin a few hours after became as hard as a piece of tanned leather, and peeled off in the following days, as if little ſcales fell from it.

October the 10th. In the morning I accompanied Mr. *Cock* to his country ſeat, which is about nine miles from *Philadelphia* to the north.

Though the woods of *Penſylvania* afford many oaks, and more ſpecies of them than are found further north, yet they do not build ſo many ſhips in this province as they do in the northern ones, and eſpecially in *New England*. But experience has taught the people that the ſame kind of trees is more durable the further it grows to the north, and that this advantage decreaſes the more it grows in warm climates. It is likewiſe plain that the trees in the ſouth grow more every year, and form thicker ringlets than thoſe in the north. The for-

mer have likewiſe much greater tubes for the circulation of the ſap than the latter. And for this reaſon they do not build ſo many ſhips in *Penſylvania*, as they do in *New England*, though more than in *Virginia* and *Maryland*; but *Carolina* builds very few, and its merchants get all their ſhips from *New England*. Thoſe which are here made of the beſt oak, hardly are ſerviceable above ten, or at moſt twelve years; for then they are ſo rotten, that no body ventures to go to ſea in them. Many captains of ſhips come over from *England* to *North-America*, in order to get ſhips built. But moſt of them chooſe *New England*, that being the moſt northerly province; and if they even come over in ſhips which are bound for *Philadelphia*, they frequently on their arrival ſet out from *Penſylvania* for *New England*. The *Spaniards* in the *Weſt Indies* are ſaid to build their ſhips of a peculiar ſort of cedar, which holds out againſt putrefaction and wet; but it is not to be met with on the continent in the *Engliſh* provinces. Here are above nine different ſorts of oak, but not one of them is comparable to the ſingle ſpecies we have in *Sweden*, with regard to its goodneſs. And therefore a ſhip of *European* oak coſts a great deal more than one made of *American* oak.

MANY

MANY people who chiefly employed themſelves in gardening, had found in a ſucceſſion of years, that the red *Beet*, which grew out of the ſeed which was got from *New York*, became very ſweet and had a very fine taſte; but that it every year loſt part of its goodneſs, if it was cultivated from ſeeds which were got here. The people were therefore obliged to get as many ſeeds of red beet every year from *New York*, as were wanted in their gardens. It has likewiſe been generally obſerved, that the plants which are produced from *Engliſh* ſeeds are always much better and more agreeable, than thoſe which come from ſeeds of this country.

IN the garden of Mr. *Cock* was a raddiſh which was in the looſe ſoil, grown ſo big as to be ſeven inches in diameter. Every body that ſaw it, owned it was uncommon to ſee them of ſuch a ſize.

THAT ſpecies of *Convolvulus* which is commonly called *Batatas*, has here the name of *Bermudian potatoes*. The common people, and the gentry without diſtinction planted them in their gardens. This is done in the ſame manner as with the common potatoes. Some people made little hillocks, into which they put theſe potatoes; but others only planted them in flat beds.

The ſoil muſt be a mixture of ſand and earth, and neither too rich, nor too poor. When they are going to plant them, they cut them, as the common potatoes, taking care however that a bud or two be left upon each piece which is intended to be planted. Their colour is commonly red without, and yellow within. They are bigger than the common ſort, and have a ſweet and very agreeable taſte, which I cannot find in the other potatoes, in artichokes or in any other root, and they almoſt melt in the mouth. It is not long ſince they have been planted here. They are dreſſed in the ſame manner as commom potatoes, and eaten either along with them, or by themſelves. They grow very faſt and very well here; but the greateſt difficulty conſiſts in keeping them over winter, for they will bear neither cold, nor a great heat, nor wet. They muſt therefore be kept during winter in a box with ſand in a warm room. In *Penſylvania* where they have no valves in their chimnies, they are put in ſuch a box with ſand, at ſome diſtance from the fire, and there they are ſecured both againſt froſt and againſt over great heat. It will not anſwer the purpoſe to put them into dry ſand in a cellar, as is commonly done with the common ſort of potatoes. For the moiſ-

moiſture which is always in cellars, penetrates the ſand, and makes them putrefy. It would probably be very eaſy to keep them in *Sweden* in warm rooms, during the cold ſeaſon. But the difficulty lies wholly in bringing them over to *Sweden*. I carried a conſiderable number of them with me on leaving *America*, and took all poſſible care in preſerving them. But we had a very violent ſtorm at ſea, by which the ſhip was ſo greatly damaged, that the water got in every where, and wetted our cloaths, beds and other moveables ſo much, that we could wring the water out of them. It is therefore no wonder that my *Bermuda potatoes* were rotten; but as they are now cultivated in *Portugal* and *Spain*, nay even in *England*, it will be eaſy to bring them into *Sweden*. The drink which the *Spaniards* prepare from theſe potatoes in their *American* poſſeſſions is not uſual in *Penſylvania*.*

Mr. *Cock* had a paper mill, on a little brook, and all the coarſer ſorts of paper are manufactured in it. It is now annually rented for fifty pounds *Penſylvania* currency.

* Mr. *Miller* deſcribes this liquor in his Gardener's Dictionary under the article of *Convolvulus*, ſpecies the 17th. and 18th.

October the 11th. I HAVE already mentioned, that every countryman has a greater or leſſer number of apple trees planted round his farm-houſe, from whence he gets great quantities of fruit, part of which he ſells, part he makes cyder of, and part he uſes in his own family for pyes, tarts, and the like. However he cannot expect an equal quantity of fruit every year. And I was told, that this year had not by far afforded ſuch a great quantity of apples as the preceding; the cauſe of which they told me, was the continual and great drought in the month of *May*, which had hurt all the bloſſoms of the apple trees, and made them wither. The heat had been ſo great as to dry up all the plants, and the graſs in the fields.

THE *Polytrichum commune*, a ſpecies of moſs, grew plentifully on wet and low meadows between the woods, and in ſeveral places quite covered them, as our moſſes cover the meadows in *Sweden*. It was likewiſe very plentiful on hills.

AGRICULTURE was in a very bad ſtate hereabouts. When a perſon had bought a piece of land, which perhaps had never been ploughed ſince the creation, he cut down part of the wood, tore up the roots, ploughed the ground, ſowed corn on it, and

and the firſt time got a plentiful crop. But the ſame land being tilled for ſeveral years ſucceſſively, without being manured, it at laſt muſt of courſe loſe its fertility. Its poſſeſſor therefore leaves it fallow, and proceeds to another part of his ground, which he treats in the ſame manner. Thus he goes on till he has changed a great part of his poſſeſſions into corn-fields, and by that means deprives the ground of its fertility. He then returns to the firſt field, which now is pretty well recovered; this he again tills as long as it will afford him a good crop, but when its fertility is exhauſted, he leaves it fallow again, and proceeds to the reſt as before.

It being cuſtomary here, to let the cattle go about the fields and in the woods both day and night, the people cannot collect much dung for manure. But by leaving the land fallow for ſeveral years together, a great quantity of weeds ſpring up in it, and get ſuch ſtrength, that it requires a conſiderable time to extirpate them. From hence it likewiſe comes, that the corn is always ſo much mixed with weeds. The great richneſs of the ſoil, which the firſt *European* coloniſts found here, and which had never been ploughed before, has given riſe to this neglect of agriculture, which is

ſtill

ſtill obſerved by many of the inhabitants. But they do not conſider, that when the earth is quite exhauſted, a great ſpace of time, and an infinite deal of labour is neceſſary to bring it again into good order; eſpecially in theſe countries which are almoſt every ſummer ſo ſcorched up by the exceſſive heat and drought. The ſoil of the corn-fields conſiſted of a thin mould, greatly mixed with a brick coloured clay, and a quantity of ſmall particles of glimmer. This latter came from the ſtones which are here almoſt every where to be met with at the depth of a foot or thereabouts. Theſe little pieces of glimmer made the ground ſparkle, when the ſun ſhone upon it.

Almost all the houſes hereabouts were built either of ſtone or bricks; but thoſe of ſtone were more numerous. *Germantown*, which is about two *Engliſh* miles long, had no other houſes, and the country houſes thereabouts, were all built of ſtone. But there are ſeveral varieties of that ſtone which is commonly made uſe of in building. Sometimes it conſiſted of a black or grey glimmer, running in undulated veins, the ſpaces between their bendings being filled up with a grey, looſe, ſmall-grained

grained limeſtone, which was eaſily friable. Some tranſparent particles of quartz were ſcattered in the maſs, of which the glimmer made the greateſt part. It was very eaſy to be cut, and with proper tools could readily be ſhaped into any form. Sometimes however the pieces conſiſted of a black, ſmall-grained glimmer, a white ſmall-grained ſandſtone, and ſome particles of quartz, and the ſeveral conſtituent parts were well mixed together; and ſometimes the ſtone had broad ſtripes of the white limeſtone without any addition of glimmer, but moſt commonly they were much blended together, and of a grey colour. Sometimes this ſtone was found to conſiſt of quite fine and black pieces of glimmer, and a grey, looſe and very ſmall-grained limeſtone. This was likewiſe very eaſy to be cut, being looſe.

THESE varieties of the ſtone are commonly found cloſe together. They were every where to be met with, at a little depth, but not in equal quantity and goodneſs; and not always eaſy to be broken. When therefore a perſon intended to build a houſe, he enquired where the beſt ſtone could be met with. It is to be found on corn-fields and meadows, at a depth which varies from two to ſix feet. The pieces were

were different as to ſize. Some were eight or ten feet long, two broad, and one thick. Sometimes they were ſtill bigger, but frequently much leſs. Hereabouts they lay in ſtrata one above another, the thickneſs of each ſtratum being about a foot. The length and breadth were different, but commonly ſuch as I have before mentioned. They muſt commonly dig three or four feet before they reach the firſt ſtratum. The looſe ground above that ſtratum, is full of little pieces of this ſtone. This ground is the common brick coloured ſoil, which is univerſal here, and conſiſts of ſand and clay, though the former is more plentiful. The looſe pieces of glimmer which ſhine ſo much in it, ſeem to have been broken off from the great ſtrata of ſtone.

It muſt be obſerved that when the people build with this ſtone, they take care to turn the flat ſide of it outwards. But as that cannot always be done, the ſtone being frequently rough on all ſides, it is eaſily cut ſmooth with tools, ſince it is ſoft, and not very difficult to be broken. The ſtones however are unequal in thickneſs, and therefore by putting them together they cannot be kept in ſuch ſtraight lines as bricks. It ſometimes likewiſe happens that pieces break off when they are cut, and leave

leave holes on the outſide of the wall. But in order to fill up theſe holes, the little pieces of ſtone which cannot be made uſe of are pounded, mixed with mortar, and put into the holes; the places thus filled up, are afterwards ſmoothed, and when they are dry, they are hardly diſtinguiſhable from the reſt at ſome diſtance. At laſt they draw on the outſide of the wall, ſtrokes of mortar, which croſs each other perpendicularly, ſo that it looks as if the wall conſiſted wholly of equal, ſquare ſtones, and as if the white ſtrokes were the places where they were joined with mortar. The inſide of the wall is made ſmooth, covered with mortar and whitewaſhed. It has not been obſerved that this kind of ſtone attracts the moiſture in a rainy or wet ſeaſon. In *Philadelphia* and its environs, you find ſeveral houſes built of this kind of ſtone.

The houſes here are commonly built in the *Engliſh* manner.

One of Mr. *Cock*'s negroes ſhewed me the ſkin of a badger *(Urſus Meles)* which he had killed a few days ago, and which convinced me that the *American* badger is the ſame with the *Swediſh* one. It was here called *Ground Hog*.

Towards night I returned to *Philadelphia*.

October

October the 12th. In the morning we went to the river *Skulkill*, partly to gather ſeeds, partly to collect plants for the herbal, and to make all ſorts of obſervations. The *Skulkill* is a narrow river, which falls into the *Delaware*, about four miles from *Philadelphia* to the ſouth; but narrow as it is, it riſes on the weſt ſide of thoſe high mountains, commonly called the blue mountains, and runs two hundred *Engliſh* miles, and perhaps more. It is a great diſadvantage to this country, that there are ſeveral cataracts in this river as low as *Philadelphia*, for which reaſon there can be no navigation on it. To day I made ſome deſcriptions and remarks on ſuch plants as the cattle liked, or ſuch as they never touched.

I observed ſeveral little ſubterraneous walks in the fields, running under ground in various directions, the opening of which was big enough for a mole: the earth, which formed as it were a vault above it, and lay elevated like a little bank, was near two inches high, full as broad as a man's hand, and about two inches thick. In uncultivated fields I frequently ſaw theſe ſubterraneous walks, which diſcovered themſelves by the ground thrown up above them, which when trod upon gave way, and made it inconvenient to walk in the field.

These

THESE walks are inhabited by a kind of mole,* which I intend to deſcribe more accurately in another work. Their food is commonly roots: I have obſerved the following qualities in one which was caught. It had greater ſtiffneſs and ſtrength in its legs, than I ever obſerved in other animals in proportion to their ſize. Whenever it intended to dig, it held its legs obliquely, like oars. I laid my handkerchief before it, and it began to ſtir in it with the ſnout, and taking away the handkerchief to ſee what it had done to it, I found that in the ſpace of a minute it had made it full of holes, and it looked as if it had been pierced very much by an awl. I was obliged to put ſome books on the cover of the box in which I kept this animal, or elſe it was flung off immediately. It was very iraſcible, and would bite great holes into any thing that was put in its way; I held a ſteel pen-caſe to it, it at firſt bit at it with great violence, but having felt its hardneſs, it would not venture again to bite at any thing. Theſe moles do not make ſuch hills as the *European* ones, but only ſuch walks as I have already deſcribed.

October

* THIS animal is probably the *Sorex criſtatus* of Dr. *Linnæus*, who ſays it is like the mole and lives in *Penſylvania*. F.

October the 13th. THERE is a plant here, from the berries of which they make a kind of wax or tallow, and for that reaſon the *Swedes* call it the *Tallow ſhrub*. The *Engliſh* call the ſame tree the *Candleberry-tree*, or *Bayberry-buſh*; and Dr. *Linnæus* gives it the name of *Myrica cerifera*. It grows abundantly on a wet ſoil, and it ſeems to thrive particularly well in the neighbourhood of the ſea, nor have I ever found it high up in the country far from the ſea. The berries grow abundantly on the female ſhrub, and look as if flower had been ſtrewed upon them. They are gathered late in autumn, being ripe about that time, and are then thrown into a kettle or pot full of boiling water; by this means their fat melts out, floats at the top of the water and may be ſkimmed off into a veſſel; with the ſkimming they go on till there is no tallow left. The tallow as ſoon as it is congealed, looks like common tallow or wax, but has a dirty green colour; it is for that reaſon melted over again, and refined, by which means it acquires a fine and pretty tranſparent green colour: this tallow is dearer than common tallow, but cheaper than wax. In *Philadelphia* they pay a ſhilling *Penſylvania* currency, for a pound of this tallow; but a pound of common tallow only

only came to half that money, and wax coſts as much again. From this tallow they make candles in many parts of this province, but they uſually mix ſome common tallow with it. Candles of this kind, do not eaſily bend, nor melt in ſummer as common candles do; they burn better and ſlower, nor do they cauſe any ſmoak, but rather yield an agreeable ſmell, when they are extinguiſhed. An old *Swede* of ninety-one years of age told me, that this ſort of candles had formerly been much in uſe with his country men. At preſent they do not make ſo many candles of this kind, if they can get the tallow of animals; it being too troubleſome to gather the berries. However theſe candles are made uſe of by poor people, who live in the neighbourhood of a place where the buſhes grow, and have not cattle enough to kill, in order to ſupply them with a ſufficient quantity of tallow. From the wax of the candleberry tree they likewiſe make a ſoap here, which has an agreeable ſcent, and is the beſt for ſhaving. This wax is likewiſe uſed by doctors and ſurgeons, who reckon it exceeding good for plaſters upon wounds. A merchant of this town once ſent a quantity of theſe candles to thoſe *American* provinces which had Roman Catholic inhabitants, thinking he

would be well paid, ſince wax candles are made uſe of in the Roman Catholick churches; but the clergy would not take them. An old *Swede* mentioned that the root of the candleberry tree was formerly made uſe of by the Indians, as a remedy againſt the tooth ach, and that he himſelf having had the tooth ach very violently, had cut the root in pieces and applied it round his tooth; and that the pain had been leſſened by it. Another *Swede* aſſured me that he had been cured of the tooth ach, by applying the peel of the root to it. In *Carolina*, they not only make candles out of the wax of the berries, but likewiſe ſealing-wax.

October the 14th. PENNY *Royal* is a plant which has a peculiar ſtrong ſcent, and grows abundantly on dry places in the country. Botaniſts call it *Cunila pulegioides*. It is reckoned very wholeſome to drink as a tea when a perſon has got cold, as it promotes perſpiration. I was likewiſe told, that on feeling a pain in any limb, this plant, if applied to it, would give immediate relief.

THE goods which are ſhipped to *London* from *New England* are the following: all ſorts of fiſh caught near *Newfoundland* and elſewhere; train-oil of ſeveral ſorts; whalebone; tar, pitch, maſts; new ſhips, of which a great

a great number is annually built; a few hides, and ſometimes ſome ſorts of wood. The *Engliſh* iſlands in *America*, as *Jamaica* and *Barbadoes*, get from *New England*, fiſh, fleſh, butter, cheeſe, tallow, horſes, cattle; all ſorts of lumber, ſuch as pails, buckets, and hogſheads; and have returns made in rum, ſugar, melaſſes, and other produces of the country, or in caſh, the greateſt part of all which they ſend to *London* (the money eſpecially) in payment of the goods received from thence, and yet all this is inſufficient to pay off the debt.

October the 15th. THE *Alders* grew here in conſiderable abundance on wet and low places, and even ſometimes on pretty high ones, but never reached the height of the *European* alders, and commonly ſtood like a buſh about a fathom or two high. Mr. *Bartram*, and other gentlemen who had frequently travelled in theſe provinces, told me that the more you go to the ſouth, the leſs are the alders, but that they are higher and taller, the more you advance to the north. I found afterwards myſelf, that the alders in ſome places of *Canada*, are little inferior to the *Swediſh* ones. Their bark is employed here in dying red and brown. A *Swediſh* inhabitant of *America*, told me that he had cut his leg to the very bone, and that ſome coagulated blood had

already been ſettled within. That he had been adviſed to boil the alder bark, and to waſh the wound often with the water: that he followed this advice, and had ſoon got his leg healed, though it had been very dangerous at firſt.

The *Phytolacca decandra* was called *Poke* by the *Engliſh*. The *Swedes* had no particular name for it, but made uſe of the *Engliſh*, with ſome little variation into *Paok*. When the juice of its berries is put upon paper or the like, it ſtrikes it with a high purple colour, which is as fine as as any in the world, and it is pity that no method is as yet found out, of making this colour laſt on woollen and linen cloth, for it fades very ſoon. Mr. *Bartram* mentioned, that having hit his foot againſt a ſtone, he had got a violent pain in it; he then bethought himſelf to put a leaf of the *Phytolacca* on his foot, by which he loſt the pain in a ſhort time, and got his foot well ſoon after. The berries are eaten by the birds about this time. The *Engliſh* and ſeveral *Swedes* make uſe of the leaves in ſpring, when they are juſt come out, and are yet tender and ſoft, and eat them partly as green cale, and partly in the manner we eat ſpinnage. Sometimes they likewiſe prepare them in the firſt of theſe ways, when the ſtalks are already grown a little longer, breaking off

none

none but the upper ſprouts which are yet tender, and not woody; but in this latter caſe, great care is to be taken, for if you eat the plant when it is already grown up, and its leaves are no longer ſoft, you may expect death as a conſequence which ſeldom fails to follow, for the plant has then got a power of purging the body to exceſs. I have known people, who, by eating great full grown leaves of this plant, have got ſuch a ſtrong dyſentery, that they were near dying with it: its berries however are eaten in autumn by children, without any ill conſequence.

Woollen and linen cloth is dyed yellow with the bark of hiccory. This likewiſe is done with the bark of the *black oak*, or *Linnæus*'s *Quercus nigra*, and that variety of it which *Cateſby* in his *Natural Hiſtory of Carolina*, vol. i. tab. 19. calls *Quercus marilandica*. The flowers and leaves of the *Impatiens Noli tangere* or balſamine, likewiſe dyed all woollen ſtuffs with a fine yellow colour.

The *Collinſonia canadenſis* was frequently found in little woods and buſhes, in a good rich ſoil. Mr. *Bartram* who knew the country perfectly well, was ſure that *Penſylvania*, and all the parts of *America* in the ſame climate, were the true and original places where this plant grows. For further

to the ſouth, neither he nor Meſſrs. *Clayton* and *Mitchel* ever found it, though the latter gentlemen have made accurate obſervations in *Virginia* and part of *Maryland*. And from his own experience he knew, that it did not grow in the northerly parts. I have never found it more than fifteen min. north of forty-three deg. The time of the year when it comes up in *Penſylvania*, is ſo late, that its ſeed has but juſt time ſufficient to ripen in, and it therefore ſeems unlikely, that it can ſucceed further north. Mr. *Bartram* was the firſt who diſcovered it, and ſent it over into *Europe*. Mr. *Juſſieu* during his ſtay at *London*, and Dr. *Linnæus* afterwards, called it *Collinſonia*, from the celebrated Mr. *Peter Collinſon*, a merchant in *London*, and fellow of the *Engliſh* and *Swediſh* Royal Societies. He well deſerved the honour of having a plant called after his name, for there are few people that have promoted natural hiſtory and all uſeful ſciences with a zeal like his; or that have done as much as he towards collecting, cultivating, and making known all ſorts of plants. The *Collinſonia* has a peculiar ſcent, which is agreeable, but very ſtrong. It always gave me a pretty violent head-ach whenever I paſſed by a place where it ſtood in plenty, and eſpecially when it was in flower.

flower. Mr. *Bartram* was acquainted with a better quality of this plant, which was that of being an excellent remedy againſt all ſorts of pain in the limbs, and againſt a cold, when the parts affected are rubbed with it. And Mr. *Conrad Weiſſer*, interpreter of the language of the Indians in *Penſylvania*, had told him of a more wonderful cure with this plant. He was once among a company of Indians, one of which had been ſtung by a rattle ſnake, the ſavages gave him over, but he boiled the collinſonia, and made the poor wretch drink the water, from which he happily recovered. Somewhat more to the north and in *New York* they call this plant *Horſeweed*, becauſe the horſes eat it in ſpring, before any other plant comes up.

October the 16th. I ASKED Mr. *Franklin* and other gentlemen who were well acquainted with this country, whether they had met with any ſigns, from whence they could have concluded that any place which was now a part of the continent, had formerly been covered with water? and I got the following account in anſwer.

1. ON travelling from hence to the ſouth, you meet with a place where the highroad is very low in the ground between two mountains. On both ſides you ſee

nothing but oyſter ſhells and muſcle ſhells in immenſe quantities above each other; however the place is many miles off the ſea.

2. WHENEVER they dig wells, or build houſes in town, they find the earth lying in ſeveral ſtrata above each other. At a depth of fourteen feet or more, they find globular ſtones, which are as ſmooth on the outſide as thoſe which lie on the ſea-ſhore, and are made round and ſmooth by the rolling of the waves. And after having dug through the ſand, and reached a depth of eighteen feet or more, they diſcover in ſome places a ſlime like that which the ſea throws up on the ſhore, and which commonly lies at its bottom and in rivers: this ſlime is quite full of trees, leaves, branches, reed, charcoal, &c.

3. IT has ſometimes happened that new houſes have ſunk on one ſide in a ſhort time, and have obliged the people to pull them down again. On digging deeper, for a very hard ground to build upon, they have found a quantity of the above ſlime, wood, roots, &c.

ARE not theſe reaſons ſufficient to make one ſuppoſe that thoſe places in *Philadelphia* which are at preſent fourteen feet and more under ground, formerly were the bottom of the

the ſea, and that by ſeveral accidents, ſand, earth, and other things were carried upon it? or, that the *Delaware* formerly was broader than it is at preſent? or, that it has changed its courſe? This laſt ſtill often happens at preſent; the river breaking off the bank on one ſide, and forming one on the other. Both the *Swedes* and *Engliſh* often ſhewed me ſuch places.

October the 18th. At preſent I did not find above ten different kinds of plants in bloſſom: they were, a *Gentiana*, two ſpecies of *Aſter*, the common Golden Rod, or *Solidago Virga aurea*, a ſpecies of *Hieracium*, the yellow wood Sorrel, or *Oxalis corniculata*, the Fox Gloves, or *Digitalis purpurea*, the *Hamamelis Virginiana*, or Witch Hazel, our common Millefoil, or *Achillæa Millefolium*, and our Dandelion, or *Leontodon Taraxacum*. All other plants had for this year laid aſide their gay colours. Several trees, eſpecially thoſe which were to flower early in ſpring, had already formed ſuch large buds, that on opening them all the parts of fructification, ſuch as *Calyx*, *Corolla*, *Stamina* and *Piſtillum* were plainly diſtinguiſhable. It was therefore eaſy to determine the genus to which ſuch trees belonged. Such were the red maple, or *Acer rubrum*, and the *Laurus æſtivalis*, a ſpecies of bay. Thus nature prepared to bring

bring forth flowers, with the firſt mild weather in the next year. The buds were at preſent quite hard, and all their parts preſſed cloſe together, that the cold might by all means be excluded.

The *black Walnut trees* had for the greateſt part dropt their leaves, and many of them were entirely without them. The walnuts themſelves were already fallen off. The green peel which encloſed them, if frequently handled, would yield a black colour, which could not be got off the fingers in two or three weeks time, though the hands were waſhed ever ſo much.

The *Cornus florida* was called *Dogwood* by the *Engliſh*, and grew abundantly in the woods. It looks beautiful when it is adorned with its numerous great white flowers in ſpring. The wood is very hard, and is therefore made uſe of for weaver's ſpools, joiner's planes, wedges, &c. When the cattle fall down in ſpring for want of ſtrength, the people tie a branch of this tree on their neck, thinking it will help them.

October the 19th. The *Tulip tree* grows every where in the woods of this country. The botaniſts call it *Liriodendron tulipifera*, becauſe its flowers both in reſpect to their ſize, and in reſpect to their exterior form,

and

and even in ſome meaſure with regard to their colour, reſemble tulips. The *Swedes* called it *Canoe tree*, for both the *Indians* and the *Europeans* often make their canoes of the ſtem of this tree. The *Engliſhmen* in *Penſylvania* give it the name of *Poplar*. It is reckoned a tree which grows to the greateſt height and thickneſs of any in *North America*, and which vies in that point with our greateſt *European* trees. The white oak and the fir in *North America*, however are little inferior to it. It cannot therefore but be very agreeable to ſee in ſpring, at the end of *May* (when it is in bloſſom) one of the greateſt trees covered for a fortnight together with flowers, which with regard to their ſhape, ſize, and partly colour are like tulips, the leaves have likewiſe ſomething peculiar, the *Engliſh* therefore in ſome places call the tree *the old woman's ſmock*, becauſe their imagination finds ſomething like it below the leaves.

Its wood is here made uſe of for canoes, boards, planks, bowls, diſhes, ſpoons, door poſts, and all ſorts of joiners work. I have ſeen a barn of a conſiderable ſize whoſe walls, and roof were made of a ſingle tree of this kind, ſplit into boards. Some joiners reckoned this wood better than oak, becauſe this latter frequently is warped, which the

the other never does, but works very eaſy; others again valued it very little. It is certain, that it contracts ſo much in hot weather, as to occaſion great cracks in the boards, and in wet weather it ſwells ſo as to be near burſting, and the people hardly know of a wood in theſe parts which varies ſo much in contracting and expanding itſelf. The joiners however make much uſe of it in their work, they ſay there are two ſpecies of it; but they are merely two varieties, one of which in time turns yellow within, the other is white, the former is ſaid to have a looſer texture. The bark (like *Ruſſia* glaſs) is diviſible into very thin leaves, which are very tough like baſt, though I have never ſeen it employed as ſuch. The leaves when cruſhed and applied to the forehead are ſaid to be a remedy againſt the head ach. When horſes are plagued with worms, the bark is pounded, and given them quite dry. Many people believe its roots to be as efficacious againſt the fever as the jeſuits bark. The trees grow in all ſorts of dry ſoil, both on high and low grounds, but too wet a ſoil will not agree with them.

October the 20th. THE *Beaver tree* is to be met with in ſeveral parts of *Penſylvania* and *New Jerſey*, in a poor ſwampy ſoil,

or

or on wet meadows. Dr. *Linnæus* calls it *Magnolia glauca*; both the *Swedes* and *Engliſh* call it *Beaver tree*, becauſe the root of this tree is the dainty of beavers, which are caught by its means, however the *Swedes* ſometimes gave it a different name, and the *Engliſh* as improperly called it *Swamp Saſſafras*, and *White Laurel*. The trees of this kind dropt their leaves early in autumn, though ſome of the young trees kept them all the winter. I have ſeldom found the beaver tree to the north of *Penſylvania*, where it begins to flower about the end of *May*. The ſcent of its bloſſoms is excellent, for by it you can diſcover within three quarters of an *Engliſh* mile, whether theſe little trees ſtand in the neighbourhood, provided the wind be not againſt it. For the whole air is filled with this ſweet and pleaſant ſcent. It is beyond deſcription agreeable to travel in the woods about that time, eſpecially towards night. They retain their flowers for three weeks and even longer, according to the quality of the ſoil on which the trees ſtand; and during the whole time of their being in bloſſom, they ſpread their odoriferous exhalations. The berries likewiſe look very fine when they are ripe, for they have a rich red colour, and hang in bunches on ſlender ſtalks. The

cough,

cough, and other pectoral diſeaſes are cured by putting the berries into rum or brandy, of which a draught every morning may be taken; the virtues of this remedy were univerſally extolled, and even praiſed for their ſalutary effects in conſumptions. The bark being put into brandy, or boiled in any other liquor, is ſaid not only to eaſe pectoral diſeaſes, but likewiſe to be of ſome ſervice againſt all internal pains and heat; and it was thought that a decoction of it could ſtop the dyſentery. Perſons who had caught cold, boiled the branches of the beaver tree in water, and drank it to their great relief. A *Swede*, called *Lars Lack*, gave the following account of a cure effected by this tree: One of his relations, an old man, had an open ſore in his leg, which would not heal up again, though he had had much advice and uſed many remedies. An Indian at laſt effected the cure in the following manner. He burnt ſome of this wood to charcoal, which he reduced to powder, mixed with the freſh fat of pork, and rubbed the open places ſeveral times. This dried up the holes, which before were continually open, and the legs of the old man were quite ſound to his death. The wood is likewiſe made uſe of for joiner's planes.

October

October the 22d. UPON trial it has been found that the following animals and birds, which are wild in the woods of *North America*, can be made nearly as tractable as domeſtic animals.

THE wild *Cows* and *Oxen*, of which ſeveral people of diſtinction have got young calves from theſe wild cows, which are to be met with in *Carolina*, and other provinces to the ſouth of *Penſylvania*, and brought them up among the tame cattle; when grown up, they were perfectly tame, but at the ſame time very unruly, ſo that there was no encloſure ſtrong enough to reſiſt them, if they had a mind to break through it; for as they poſſeſs a great ſtrength in their neck, it was eaſy for them to overthrow the pales with their horns, and to get into the corn-fields; and as ſoon as they had made a road, all the tame cattle followed them; they likewiſe copulated with the latter, and by that means generated as it were a new breed. This *American* ſpecies of oxen is *Linnæus*'s *Bos Biſon*, β.

AMERICAN DEER, can likewiſe be tamed; and I have ſeen them tame myſelf in different places. A farmer in *New Jerſey* had one in his poſſeſſion, which he had caught when it was very young; and at preſent it was ſo tame, that in the day time it run

run into the wood for its food, and towards night it returned home, and frequently brought a wild deer out of the wood, giving its maſter an opportunity to ſhoot it. Several people have therefore tamed young deer, and make uſe of them for hunting wild deer, or for decoying them home, eſpecially in the time of their rutting.

BEAVERS have been ſo tamed that they have gone on fiſhing, and brought home what they had caught to their maſters. This often is the caſe with *Otters*, of which I have ſeen ſome, which were as tame as dogs, and followed their maſters wherever they went; if he went out in a boat, the otter went with him, jumped into the water, and after a while came up with a fiſh. The *Opoſſum*, can likewiſe be tamed, ſo as to follow people like a dog.

THE *Raccoon* which we *(Swedes)* call *Siupp*, can in time be made ſo tame as to run about the ſtreets like a domeſtic animal; but it is impoſſible to make it leave off its habit of ſtealing. In the dark it creeps to the poultry, and kills in one night a whole ſtock. Sugar and other ſweet things muſt be carefully hidden from it, for if the cheſts and boxes are not always locked up, it gets into them, eats the ſugar, and licks up the treacle with its paws: the ladies therefore have

have every day ſome complaint againſt it, and for this reaſon many people rather forbear the diverſion which this ape-like animal affords.

The *grey* and *flying Squirrels* are ſo tamed by the boys, that they ſit on their ſhoulders, and follow them every where.

The *Turkey Cocks* and *Hens* run about in the woods of this country, and differ in nothing from our tame ones, except in their ſuperior ſize, and redder, though more palatable fleſh. When their eggs are found in the wood, and put under tame *Turkey* hens, the young ones become tame; however when they grow up, it ſometimes happens that they fly away; their wings are therefore commonly clipped, eſpecially when young. But the tamed turkeys are commonly much more iraſcible, than thoſe which are naturally tame. The Indians likewiſe employ themſelves in taming them and keeping them near their huts.

Wild *Geeſe* have likewiſe been tamed in the following manner. When the wild geeſe firſt come hither in ſpring, and ſtop a little while (for they do not breed in *Penſylvania*) the people try to ſhoot them in the wing, which however is generally mere chance. They then row to the place where

the wild gooſe fell, catch it, and keep it for ſome time at home, by this means many of them have been made ſo tame, that when they were let out in the morning, they returned in the evening, but to be more ſure of them, their wings are commonly clipped. I have ſeen wild geeſe of this kind, which the owner aſſured me, that he had kept for more than twelve years; but though he kept eight of them, yet he never had the pleaſure to ſee them copulate with the tame ones, or lay eggs.

PARTRIDGES, which are here in abundance, may likewiſe be ſo far tamed, as to run about all day with the poultry, and to come along with them to be fed when they are called. In the ſame manner I have ſeen *wild Pigeons*, which were made ſo tame as to fly out and return again. In ſome winters there are immenſe quantities of wild pigeons in *Penſylvania*.

October the 24th. OF all the rare birds of *North America*, the *Humming bird* is the moſt admirable, or at leaſt moſt worthy of peculiar attention. Several reaſons induce me to believe that few parts of the world can produce its equal. Dr. *Linnæus* calls it *Trochilus Colubris*. The *Swedes* and ſome *Engliſhmen* call it the *King's bird*, but the name of *Humming bird* is more common.

Cateſby

Cateſby in his *Natural Hiſtory of Carolina*, Vol. 1. page 65, tab. 65. has drawn it, in its natural ſize, with its proper colours, and added a deſcription of it.* In ſize it is not much bigger than a large *humble bee*, and is therefore the leaſt of all birds,† or it is much if there is a leſſer ſpecies in the world. Its plumage is moſt beautifully coloured, moſt of its feathers being green, ſome grey, and others forming a ſhining red ring round its neck; the tail glows with fine feathers, changing from green into a braſs colour. Theſe birds come here in ſpring about the time when it begins to grow very warm, and make their neſts in ſummer, but towards autumn they retreat again into the more ſouthern countries of *America*. They ſubſiſt barely upon the nectar, or ſweet juice of flowers contained in that part, which botaniſts call the nectarium, and which they ſuck up with their long bills. Of all the flowers, they like thoſe moſt, which have a long tube, and I

* THE ſame is to be met with in *Edwards*'s Natural Hiſtory of Birds, page 38. tab. 38. F.

† THERE is a much leſſer ſpecies of humming-bird, by *Linnæus* called *Trochilus minimus*, being the leaſt bird known; Sir *Hans Sloane*'s living one, weighed only twenty grains, and Mr. *Edwards*'s dry one forty-five. It is drawn in *Edwards*'s *birds*, t. 150, in its natural ſize, together with its egg. F.

have obſerved that they have fluttered chiefly about the *Impatiens Noli tangere*, and the *Monarda* with crimſon flowers. An inhabitant of the country is ſure to have a number of theſe beautiful and agreeable little birds before his window all the ſummer long, if he takes care to plant a bed with all ſorts of fine flowers under them. It is indeed a diverting ſpectacle to ſee theſe little active creatures flying about the flowers like bees, and ſucking their juices with their long and narrow bills. The flowers of the above-mentioned *Monarda* grow *verticillated*, that is, at different diſtances they ſurround the ſtalk, as the flowers of our mint *(Mentha)* baſtard hemp *(Galeopſis)* mother-wort *(Leonurus)* and dead nettle *(Lamium)*. It is therefore diverting to ſee them putting their bills into every flower in the circle. As ſoon as they have ſucked the juice of one flower, they flutter to the next. One that has not ſeen them would hardly believe in how ſhort a ſpace of time they have had their tongues in all the flowers of a plant, which when large and with a long tube, the little bird by putting its head into them, looks as if it crept with half its body into them.

During their ſucking the juice out of the flowers they never ſettle on it, but flutter

flutter continually like bees, bend their feet backwards, and move their wings ſo quick, that they are hardly viſible. During this fluttering they make a humming like bees, or like that which is occaſioned by the turning of a little wheel. After they have thus, without reſting, fluttered for a while, they fly to a neighbouring tree or poſt, and reſume their vigour again. They then return to their humming and ſucking. They are not very ſhy, and I in company with ſeveral other people, have not been full two yards from the place where they fluttered about and ſucked the flowers; and though we ſpoke and moved, yet they were no ways diſturbed; but on going towards them, they would fly off with the ſwiftneſs of an arrow. When ſeveral of them were on the ſame bed, there was always a violent combat between them, in meeting each other at the ſame flower (for envy was likewiſe predominant amongſt theſe little creatures) and they attacked with ſuch impetuoſity, that it would ſeem as if the ſtrongeſt would pierce its antagoniſt through and through, with its long bill. During the fight, they ſeem to ſtand in the air, keeping themſelves up, by the incredibly ſwift motion of their wings. When the windows towards the garden are open, they

purſue each other into the rooms, fight a little, and flutter away again. Sometimes they come to a flower which is withering, and has no more juice in it; they then in a fit of anger pluck it off, and throw it on the ground, that it may not miſlead them for the future. If a garden contains a great number of theſe little birds, they are ſeen to pluck off the flowers in ſuch quantities, that the ground is quite covered with them, and it ſeems as if this proceeded from a motion of envy.

COMMONLY you hear no other ſound than their humming, but when they fly againſt each other in the air, they make a chirping noiſe like a ſparrow or chicken. I have ſometimes walked with ſeveral other people in ſmall gardens, and theſe birds have on all ſides fluttered about us, without appearing very ſhy. They are ſo ſmall that one would eaſily miſtake them for great humming-bees or butterflies, and their flight reſembles that of the former, and is incredibly ſwift. They have never been obſerved to feed on inſects or fruit; the nectar of flowers, ſeems therefore to be their only food. Several people have caught ſome humming birds on account of their ſingular beauty, and have put them into cages, where they died for want of a proper food.

However

However Mr. *Bartram* has kept a couple of them for ſeveral weeks together, by feeding them with water in which ſugar had been diſſolved, and I am of opinion that it would not be difficult to keep them all winter in a hot-houſe.

The humming bird always builds its neſt in the middle of a branch of a tree, and it is ſo ſmall, that it cannot be ſeen from the ground, but he who intends to ſee it muſt get up to the branch. For this reaſon it is looked upon as a great rarity if a neſt is accidentally found, eſpecially as the trees in ſummer have ſo thick a foliage. The neſt is likewiſe the leaſt of all; that which is in my poſſeſſion is quite round, and conſiſts in the inſide of a browniſh and quite ſoft down, which ſeems to have been collected from the leaves of the great mullein or *Verbaſcum Thapſus*, which are often found covered with a ſoft wool of this colour, and the plant is plentiful here. The outſide of the neſt has a coating of green moſs, ſuch as is common on old pales or encloſures and on trees; the inner diameter of the neſt is hardly a geometrical inch at the top, and its depth half an inch. It is however known that the humming birds make their neſts likewiſe of flax, hemp, moſs, hair and other ſuch ſoft

materials; they are ſaid to lay two eggs, each of the ſize of a pea.

October the 25th. I employed this day and the next in packing up all the ſeeds gathered this autumn, for I had an opportunity of ſending them to *England* by the ſhips which ſailed about this time. From *England* they were forwarded to *Sweden*.

October the 27th. In the morning I ſet out on a little journey to *New York*, in company with Mr. *Peter Cock*, with a view to ſee the country, and to enquire into the ſafeſt road, which I could take in going to *Canada*, through the deſart or uninhabited country between it and the *Engliſh* provinces.

That part where we travelled at preſent was pretty well inhabited on both ſides of the road, by *Engliſhmen*, *Germans* and other *Europeans*. Plains and hills of different dimenſions were ſeen alternately, mountains and ſtones, I never ſaw, excepting a few pebbles. Near almoſt every farm was a great orchard with peach and apple trees, ſome of which were yet loaded with fruit.

The encloſures were in ſome parts low enough, for the cattle to leap over them with eaſe; to prevent this the hogs had a triangular wooden yoke: this cuſtom was as I have already obſerved, common over all

all the *Engliſh* plantations. To the horſes neck was faſtened a piece of wood, which at the lower end had a tooth or hook, faſtening in the encloſure, and ſtopping the horſe, juſt when it lifted its fore feet to leap over; but I know not whether this be a good invention with regard to horſes. They were likewiſe kept in bounds by a piece of wood, one end of which was faſtened to one of the fore feet, and the other to one of the hind feet, and it forced them to walk pretty ſlowly, as at the ſame time it made it impoſſible for them to leap over the encloſures. To me it appeared that the horſes were ſubject to all ſorts of dangerous accidents from this piece of wood.

NEAR *New Frankfurt* we rode over a little ſtone bridge, and ſomewhat further, eight or nine *Engliſh* miles from *Philadelphia* we paſſed over another, which was likewiſe of ſtone. There are not yet any mileſtones put up in the country, and the inhabitants only compute the diſtances by gueſs. We were afterwards brought over a river in a ferry, where we paid threepence a perſon, for ourſelves and our horſes.

AT one of the places where we ſtopt to have our horſes fed, the people had a *Mocking-bird* in a cage; and it is here reckoned the beſt ſinging bird, though its plumage

plumage be very ſimple, and not ſhowy at all. At this time of the year it does not ſing. *Linnæus* calls it *Turdus polyglottos*, and *Cateſby* in his *Natural Hiſtory of Carolina*, Vol. 1. p. 27. tab. 27, has likewiſe deſcribed and drawn this bird. The people ſaid that it built its neſts in the buſhes and trees, but is ſo ſhy, that if any body come and look at its eggs, it leaves the neſt, never to come to it again. Its young ones require great care in being bred up. If they are taken from their mother and put into a cage, ſhe feeds them for three or four days; but ſeeing no hopes of ſetting them at liberty, ſhe flies away. It then often happens, that the young ones die ſoon after, doubtleſs becauſe they cannot accuſtom themſelves to eat what the people give them. But it is generally imagined, that the laſt time the mother feeds them, ſhe finds means to poiſon them, in order, the ſooner to deliver them from ſlavery and wretchedneſs. Theſe birds ſtay all ſummer in the colonies, but retire in autumn to the ſouth, and ſtay away all winter. They have got the name of *Mocking-birds*, on account of their ſkill in imitating the note of almoſt every bird they hear. The ſong peculiar to them is excellent, and varied by an infinite change of notes

notes and melody; ſeveral people are therefore of opinion, that they are the beſt ſinging birds in the world. So much is certain, that few birds come up to them; this is what makes them precious: the *Swedes* call it by the ſame name as the *Engliſh*.

About noon we came to *New Briſtol*, a ſmall town in *Penſylvania*, on the banks of the *Delaware*, about fifteen *Engliſh* from *Philadelphia*. Moſt of the houſes are built of ſtone, and ſtand aſunder. The inhabitants carry on a ſmall trade, though moſt of them get their goods from *Philadelphia*. On the other ſide of the river, almoſt directly oppoſite to *New Briſtol*, lies the town of *Burlington*, in which the governor of *New Jerſey* reſides.

We had now country ſeats on both ſides of the roads. Now we came into a lane encloſed with pales on both ſides, including pretty great corn-fields. Next followed a wood, and we perceived for the ſpace of four *Engliſh* miles nothing but woods, and a very poor ſoil, on which the *Lupinus perennis* grew plentifully and ſucceeded well. I was overjoyed to ſee a plant come on ſo well in theſe poor dry places, and even began to meditate, how to improve this diſcovery in a ſoil like that which it inhabited. But I afterwards had the mortification to find that the

the horſes and cows eat almoſt all the other plants, but left the lupine, which was however very green, looked very freſh, and was extremely ſoft to the touch. Perhaps means may be found out of making this plant palatable to the cattle. In the evening we arrived at *Trenton*, after having previouſly paſſed the *Delaware* in a ferry.

October the 28th. TRENTON is a long narrow town, ſituate at ſome diſtance from the river *Delaware*, on a ſandy plain; it belongs to *New Jerſey*, and they reckon it thirty miles from *Philadelphia*. It has two ſmall churches, one for the people belonging to the church of *England*, the other for the preſbyterians. The houſes are partly built of ſtone, though moſt of them are made of wood or planks, commonly two ſtories high, together with a cellar below the building, and a kitchen under ground, cloſe to the cellar. The houſes ſtand at a moderate diſtance from one another. They are commonly built ſo, that the ſtreet paſſes along one ſide of the houſes, while gardens of different dimenſions bound the other ſide; in each garden is a draw-well; the place is reckoned very healthy. Our landlord told us, that twenty-two years ago, when he firſt ſettled here, there was hardly more than one houſe; but from that

time

time *Trenton* has encreaſed ſo much, that there are at preſent near a hundred houſes. The houſes were within divided into ſeveral rooms by their partitions of boards. The inhabitants of the place carried on a ſmall trade with the goods which they got from *Philadelphia*, but their chief gain conſiſted in the arrival of the numerous travellers between that city and *New York*; for they are commonly brought by the *Trenton Yachts* from *Philadelphia* to *Trenton*, or from thence to *Philadelphia*. But from *Trenton* further to *New Brunſwick*, the travellers go in the waggons which ſet out every day for that place. Several of the inhabitants however likewiſe ſubſiſt on the carriage for all ſorts of goods, which are every day ſent in great quantities, either from *Philadelphia* to *New York*, or from thence to the former place; for between *Philadelphia* and *Trenton* all goods go by water, but between *Trenton* and *New Brunſwick* they are all carried by land, and both theſe conveniences belong to people of this town.

For the yachts which go between this place and the capital of *Penſylvania*, they uſually pay a ſhilling and ſix-pence of *Penſylvania* currency per perſon, and every one pays beſides for his baggage. Every paſſenger

ſenger muſt provide meat and drink for himſelf, or pay ſome ſettled fare: between *Trenton* and *New Brunſwick* a perſon pays two ſhillings and ſixpence, and the baggage is likewiſe paid for ſeparately.

We continued our journey in the morning; the country through which we paſſed was for the greateſt part level, though ſometimes there were ſome long hills, ſome parts were covered with trees, but far the greater part of the country was without woods; on the other hand I never ſaw any place in *America*, the towns excepted, ſo well peopled. An old man, who lived in this neighbourhood and accompanied us for ſome part of the road, however aſſured me, that he could well remember the time, when between *Trenton* and *New Brunſwick* there were not above three farms, and he reckoned it was about fifty and ſome odd years ago. During the greater part of the day we had very extenſive corn-fields on both ſides of the road, and commonly towards the ſouth the country had a great declivity. Near almoſt every farm was a ſpacious orchard full of peaches and apple trees, and in ſome of them the fruit was fallen from the trees in ſuch quantities, as to cover nearly the whole ſurface. Part of it they left to rot, ſince they could not take it all in

and

and conſume it. Wherever we paſſed by we were always welcome to go into the fine orchards, and gather our hats and pockets full of the choiceſt fruit, without the poſſeſſor's ſo much as looking after it. Cherry trees were planted near the farms, on the roads, &c.

THE *barns** had a peculiar kind of conſtruction hereabouts, which I will give a conciſe deſcription of. The whole building was very great, ſo as almoſt to equal a ſmall church; the roof was pretty high, covered with wooden ſhingles, declining on both ſides, but not ſteep: the walls which ſupport it, were not much higher than a full grown man; but on the other hand the breadth of the building was the more conſiderable: in the middle was the threſhing floor, and above it, or in the loft or garret they put the corn which was not yet threſhed, the ſtraw, or any thing elſe, according to the ſeaſon: on one ſide were ſtables for the horſes, and on the other for the cows. And the ſmall cattle had likewiſe their particular ſtables or ſtyes; on both ends of the buildings were great gates, ſo

* THE author ſeems to comprehend more by this word, than what it commonly includes, for he deſcribes it as a building, which contains both a barn and ſtables. F.

ſo that one could come in with a cart and horſes through one of them, and go out at the other: here was therefore under one roof the threſhing floor, the barn, the ſtables, the hay loft, the coach houſe, &c. This kind of buildings is chiefly made uſe of by the *Dutch* and *Germans*; for it is to be obſerved that the country between *Trenton* and *New York*, is inhabited by few *Engliſhmen*, but inſtead of them by *Germans* or *Dutch*,* the latter of which eſpecially are numerous.

Before I proceed, I find it neceſſary to remark one thing with regard to the Indians, or old *Americans*. For this account may perhaps meet with readers, who, like many people of my acquaintance, may be of opinion that all *North America*, was almoſt wholly inhabited by ſavage or heathen nations, and they may be aſtoniſhed, that I do not mention them more frequently in my account. Others may perhaps imagine, that when I mention in my journal, that the country is much cultivated, that in ſeveral places, houſes of ſtone or wood are built, round which are corn-fields, gardens, and

* This kind of building is frequent in the north of *Germany*, *Holland*, and *Pruſſia*, and therefore it is no wonder that it is employed by people who, were uſed to them in their own country. F.

and orchards, that I am ſpeaking of the property of the *Indians*; to undeceive them, I here give the following explication. The country eſpecially all along the coaſts, in the *Engliſh* colonies, is inhabited by *Europeans*, who in ſome places are already ſo numerous, that few parts of *Europe* are more populous. The *Indians* have ſold the country to the *Europeans*, and have retired further up: in moſt parts you may travel twenty *Swediſh* miles, or about a hundred and twenty *Engliſh* miles, from the ſea ſhore, before you reach the firſt habitations of the *Indians*. And it is very poſſible for a perſon to have been at *Philadelphia* and other towns on the ſea ſhore for half a year together, without ſo much as ſeeing an *Indian*. I intend in the ſequel to give a more circumſtantial account of them, their religion, manners, oeconomy, and other particulars relating to them: at preſent I return to the ſequel of my journal.

About nine Engliſh miles from *Trenton*, the ground began to change its colour; hitherto it conſiſted of a conſiderable quantity of hazel coloured clay, but at preſent the earth was a reddiſh brown, ſo that it ſometimes had a purple colour, and ſometimes looked like logwood. This colour came from a red limeſtone which approach-

ed very near to that which is on the mountain *Kinnekulle* in *Weſt Gothland*, and makes a particular ſtratum in the rock. The *American* red limeſtone therefore ſeems to be merely a variety of that I ſaw in *Sweden*, it lay in ſtrata of two or three fingers thickneſs; but was diviſible into many thinner plates or ſhivers, whoſe ſurface was ſeldom flat and ſmooth, but commonly rough: the ſtrata themſelves were frequently cut off by horizontal cracks. When theſe ſtones were expoſed to the air, they by degrees ſhivered and withered into pieces, and at laſt turned into duſt. The people of this neighbourhood did not know how to make any uſe of it; the ſoil above is ſometimes rich and ſometimes poor: in ſuch places where the people had lately dug new wells, I perceived, that moſt of the rubbiſh which was thrown up conſiſted of ſuch a ſpecies of ſtone. This reddiſh brown earth we always ſaw till near *New Brunſwick*, where it is particularly plentiful. The banks of the river, ſhewed in many places nothing but ſtrata of *Limeſtone*, which did not run horizontally, but dipped very much.

About ten o'clock in the morning we came to *Prince-town*, which is ſituated in a plain. Moſt of the houſes are built of wood, and are not contiguous, ſo that there are

are gardens and paſtures between them. As theſe parts were ſooner inhabited by *Europeans* than *Penſylvania*, the woods were likewiſe more cut away, and the country more cultivated, ſo that one might have imagined himſelf to be in *Europe*.

We now thought of continuing our journey, but as it began to rain very heavily, and continued ſo during the whole day and part of the night, we were forced to ſtay till next morning.

October the 29th. This morning we proceeded on our journey. The country was pretty well peopled; however there were yet great woods in many places: they all conſiſted of deciduous trees: and I did not perceive a ſingle tree of the fir kind, till I came to *New Brunſwick*. The ground was level, and did not ſeem to be every where of the richeſt kind. In ſome places it had hillocks, loſing themſelves almoſt imperceptibly in the plains, which were commonly croſſed by a rivulet. Almoſt near every farm-houſe were great orchards. The houſes were commonly built of timber, and at ſome diſtance by themſelves ſtood the ovens for baking, conſiſting commonly of clay.

On a hill covered with trees, and called *Rockhill*, I ſaw ſeveral pieces of ſtone or

rock, ſo big, that they would have required three men to roll them down. But beſides theſe there were few great ſtones in the country; for moſt of thoſe which we ſaw, could eaſily be lifted up by a ſingle man. In another place we perceived a number of little round pebbles, but we did not meet with either mountains or rocks.

About noon we arrived at *New Brunſwick*, a pretty little town in the province of *New Jerſey*, in a valley on the weſt ſide of the river *Rareton*; on account of its low ſituation, it cannot be ſeen (coming from *Penſylvania*) before you get to the top of the hill, which is quite cloſe up to it: the town extends north and ſouth along the river. The *German* inhabitants have two churches one of ſtone and the other of wood. The *Engliſh* church is likewiſe of the latter kind, but the preſbyterians were building one of ſtone: the town houſe makes likewiſe a pretty good appearance. Some of the other houſes are built of bricks, but moſt of them are made either wholly of wood, or of bricks and wood; the wooden houſes are not made of ſtrong timber, but merely of boards or planks, which are within joined by laths: ſuch houſes as conſiſt of both wood and bricks, have only the wall towards the ſtreet of bricks, all the other ſides being merely of planks. This peculiar

peculiar kind of oſtentation would eaſily lead a traveller, who paſſes through the town in haſte, to believe that moſt of the houſes are built of bricks. The houſes were covered with ſhingles; before each door there was an elevation, to which you aſcend by ſome ſteps from the ſtreet; it reſembled a ſmall balcony, and had ſome benches on both ſides, on which the people ſat in the evening, in order to enjoy the freſh air, and to have the pleaſure of viewing thoſe who paſſed by. The town has only one ſtreet lengthways, and at its northern extremity there is a ſtreet acroſs; both of theſe are of a conſiderable length.

THE river *Rareton* paſſes hard by the town, and is deep enough for great yachts to come up; its breadth near the town is within the reach of a common gun ſhot; the tide comes up ſeveral miles beyond the town, the yachts were placed lengthways along the bridge; the river has very high and pretty ſteep banks on both ſides, but near the town there are no ſuch banks, it being ſituated in a low valley. One of the ſtreets is almoſt entirely inhabited by *Dutchmen*, who came hither from *Albany*, and for that reaſon they call it *Albany ſtreet*. Theſe *Dutch* people only keep company among themſelves, and ſeldom or never go amongſt the other inhabitants, living as it were

quite ſeparate from them. *New Brunſwick* belongs to *New Jerſey;* however the greateſt part, or rather all its trade is to *New York,* which is about forty Engliſh miles diſtant; to that place they ſend corn, flour in great quantities, bread, ſeveral other neceſſaries, a great quantity of linſeed, boards timber, wooden veſſels, and all ſorts of carpenters work. Several ſmall yachts are every day going backwards and forwards between theſe two towns. The inhabitants likewiſe get a conſiderable profit from the travellers, who every hour paſs through, on the high road.

The ſteep banks conſiſt of the red limeſtone, which I have before deſcribed. It is here plainly viſible that the ſtrata are not horizontal, but conſiderably dipping, eſpecially towards the ſouth. The weather and the air has in a great meaſure diſſolved the ſtone here: I enquired, whether it could not be made uſe of, but was aſſured, that in building houſes it was entirely uſeleſs; for, though it is hard and permanent under ground, yet on being dug out, and expoſed for ſome time to the air, it firſt crumbles into greater, then into leſſer pieces, and at laſt is converted into duſt. An inhabitant of this town, however tried to build a houſe with this ſort of ſtone, but its

its outſides being expoſed to the air, ſoon began to change ſo much, that the owner was obliged to put boards all over the wall, to preſerve it from falling to pieces. The people however pretend that this ſtone is a very good manure, if it is ſcattered upon the corn-fields in its rubbiſh ſtate, for it is ſaid to ſtifle the weeds: it is therefore made uſe of both on the fields and in gardens.*

Towards the evening we continued our journey, and were ferried over the river *Rareton*, together with our horſes. In a very dry ſummer, and when the tide has ebbed, it is by no means dangerous to ride through this river. On the oppoſite ſhore the red juniper tree was pretty abundant. The country through which we now paſſed was pretty well inhabited, but in moſt places full of ſmall pebbles.

We ſaw *Guinea Hens* in many places where we paſſed by. They ſometimes run about the fields, at a good diſtance from the farm-houſes.

About eight Engliſh miles from *New Brunſwick*, the road divided. We took that on the left, for that on the right leads

* Probably it is a ſtone marle; a blue and reddiſh ſpecies of this kind is uſed with good ſucceſs, in the county of *Bamff* in *Scotland*.

to *Amboy*, the chief ſea-town in *New Jerſey*. The country now made a charming appearance; ſome parts being high, others forming vallies, and all of them well cultivated. From the hills you had a proſpect of houſes, farms, gardens, corn-fields, foreſts, lakes, iſlands, roads, and paſtures.

In moſt of the places where we travelled this day the colour of the ground was reddiſh. I make no doubt, but there were ſtrata of the before-mentioned red limeſtone under it. Sometimes the ground looked very like a cinnabar ore.

Wood-bridge is a ſmall village in a plain, conſiſting of a few houſes: we ſtopped here to reſt our horſes a little. The houſes were moſt of them built of boards; the walls had a covering of ſhingles on the outſide; theſe ſhingles were round at one end, and all of a length in each row: ſome of the houſes had an Italian roof, but the greateſt part had roofs with pediments; moſt of them were covered with ſhingles. In moſt places we met with wells and buckets to draw up the water.

Elizabeth-town is a ſmall town, about twenty Engliſh miles diſtant from *New Brunſwick*: we arrived there immediately after ſun ſetting. Its houſes are moſtly ſcattered, but well built, and generally of

of boards, with a roof of ſhingles, and walls covered with the ſame. There were likewiſe ſome ſtone buildings. A little rivulet paſſes through the town from weſt to eaſt; it is almoſt reduced to nothing when the water ebbs away, but with the full tide they can bring up ſmall yachts. Here were two fine churches, each of which made a much better appearance than any one in *Philadelphia*. That belonging to the people of the church of *England* was built of bricks, had a ſteeple with bells, and a baluſtrade round it, from which there was a proſpect of the country. The meeting houſe of the preſbyterians was built of wood, but had both a ſteeple and bells, and was, like the other houſes covered with ſhingles. The town houſe made likewiſe a good appearance, and had a ſpire with a bell. The banks of the river were red, from the reddiſh limeſtone; both in and about the town were many gardens and orchards, and it might truly be ſaid that *Elizabeth-town* was ſituated in a garden; the ground hereabouts being even and well cultivated.

The geeſe, in ſome of the places by which we paſſed this day and the next, carried three or four little ſticks, of the length of a foot about their necks; they were

were faſtened croſſways, to prevent them from creeping through half broken encloſures. They look extremely awkward, and it is very diverting to ſee them in this attire.

At night we took up our lodgings at *Elizabeth-town Point*, an inn about two *Engliſh* miles diſtant from the town, and the laſt houſe on this road belonging to *New Jerſey*. The man who had taken the leaſe of it, together with that of the ferry near it, told us that he paid a hundred and ten pounds of *Penſylvania* currency to the owner.

October the 30th. We were ready to proceed on our journey at ſun-riſing. Near the inn where we had paſſed the night, we were to croſs a river, and we were brought over, together with our horſes, in a wretched half rotten ferry. This river came a conſiderable way out of the country, and ſmall veſſels could eaſily ſail up it. This was a great advantage to the inhabitants of the neighbouring country, giving them an opportunity of ſending their goods to *New York* with great eaſe; and they even made uſe of it for trading to the *Weſt Indies*. The country was low on both ſides of the river, and conſiſted of meadows. But there was no other hay to be got, than ſuch as commonly

monly grows in ſwampy grounds; for as the tide comes up in this river, theſe low plains were ſometimes overflowed when the water was high. The people hereabouts are ſaid to be troubled in ſummer with immenſe ſwarms of gnats or muſquetoes, which ſting them and their cattle. This was aſcribed to the low ſwampy meadows, on which theſe inſects depoſite their eggs, which are afterwards hatched by the heat.

As ſoon as we had got over the river, we were upon *Staten Iſland*, which is quite ſurrounded with ſalt water. This is the beginning of the province of *New York*. Moſt of the people ſettled here were *Dutchmen*, or ſuch as came hither whilſt the *Dutch* were yet in poſſeſſion of this place. But at preſent they were ſcattered among the *Engliſh* and other *European* inhabitants, and ſpoke *Engliſh* for the greateſt part. The proſpect of the country here is extremely pleaſing, as it is not ſo much intercepted by woods, but offers more cultivated fields to view. Hills and vallies ſtill continued, as uſual, to change alternately.

The farms were near each other. Moſt of the houſes were wooden; however ſome were built of ſtone. Near every farm-houſe was an orchard with apple trees: the fruit was already for the greateſt part gathered.

Here,

Here, and on the whole journey before, I obſerved a preſs for cyder at every farm-houſe, made in different manners, by which the people had already preſſed the juice out of the apples, or were juſt buſied with that work. Some people made uſe of a wheel made of thick oak planks, which turned upon a wooden axis by means of a horſe drawing it, much in the ſame manner as the people do with woad; * except that here the wheel runs upon planks. Cherry trees ſtood along the encloſures round corn-fields.

The corn-fields were excellently ſituated, and either ſown with wheat or rye. They had no ditches on their ſides, but (as is uſual in *England*) only furrows, drawn at greater or leſſer diſtances from each other.

In one place we obſerved a water mill, ſo ſituated, that when the tide flowed, the water ran into a pond: but when it ebbed, the floodgate was drawn up, and the mill driven by the water, flowing out of the pond.

About eight o'clock in the morning we arrived at the place where we were to croſs the

* Dr. *Linnæus*, in his Travels through *Weſtrogothia*, has given a drawing of the machine by which woad is prepared, on the 128th. page.

the water, in order to come to the town of *New York*. We left our horſes here and went on board the yacht: we were to go eight *Engliſh* miles by ſea; however we landed about eleven o'clock in the morning at *New York*. We ſaw a kind of wild ducks in immenſe quantities upon the water: the people called them *Blue bills*, and they ſeemed to be the ſame with our *Pintail ducks*, or *Linnæus*'s *Anas acuta:* but they were very ſhy. On the ſhore of the continent we ſaw ſome very fine ſloping cornfields, which at preſent looked quite green, the corn being already come up. We ſaw many boats in which the fiſhermen were buſy catching oyſters: to this purpoſe they make uſe of a kind of rakes with long iron teeth bent inwards; theſe they uſed either ſingly or two tied together in ſuch a manner, that the teeth were turned towards each other.

October the 31ſt. ABOUT *New York* they find innumerable quantities of excellent oyſters, and there are few places which have oyſters of ſuch an exquiſite taſte, and of ſo great a ſize: they are pickled and ſent to the *Weſt Indies* and other places; which is done in the following manner. As ſoon as the oyſters are caught, their ſhells are opened, and the fiſh waſhed clean; ſome

ſome water is then poured into a pot, the oyſters are put into it, and they muſt boil for a while; the pot is then taken off from the fire again, the oyſters taken out and put upon a diſh, till they are ſomewhat dry: then you take ſome mace, allſpice, black pepper, and as much vinegar as you think is ſufficient to give a ſouriſh taſte. All this is mixed with half the liquor in which the oyſters were boiled, and put over the fire again. While you boil it great care is to be taken in ſcumming off the thick ſcum; at laſt the whole pickle is poured into a glaſs or earthen veſſel, the oyſters are put to it, and the veſſel is well ſtopped to keep out the air. In this manner, oyſters will keep for years together, and may be ſent to the moſt diſtant parts of the world.

The merchants here buy up great quantities of oyſters about this time, pickle them in the above-mentioned manner, and ſend them to the *Weſt Indies*: by which they frequently make a conſiderable profit: for, the oyſters, which coſt them five ſhillings of their currency, they commonly ſell for a piſtole, or about ſix times as much as they gave for them; and ſometimes they get even more: the oyſters which are thus pickled have a very fine flavour. The following is another way of preſerving oyſters: they

they are taken out of the ſhells, fried with butter, put into a glaſs or earthen veſſel with the melted butter over them, ſo that they are quite covered with it, and no air can get to them. Oyſters prepared in this manner have likewiſe an agreeable taſte, and are exported to the *Weſt Indies* and other parts.

Oysters are here reckoned very wholeſome, ſome people aſſured us, that they had not felt the leaſt inconvenience, after eating a conſiderable quantity of them. It is likewiſe a common rule here that oyſters are beſt in thoſe months which have an *r* in their name, ſuch as *September*, *October*, &c; but that they are not ſo good in other months; however there are poor people, who live all the year long upon nothing but oyſters with bread.

The ſea near *New York*, affords annually the greateſt quantity of oyſters. They are found chiefly in a muddy ground, where they lie in the ſlime, and are not ſo frequent in a ſandy bottom: a rockey and a ſtony bottom is ſeldom found here. The oyſter ſhells are gathered in great heaps, and burnt into a lime, which by ſome people is made uſe of in building houſes, but is not reckoned ſo good as that made of limeſtone. On our journey to *New York*, we

ſaw

ſaw high heaps of oyſter ſhells near the farm-houſes, upon the ſea ſhore; and about *New York*, we obſerved the people had carried them upon the fields which were ſown with wheat. However they were entire, and not cruſhed.

THE *Indians* who inhabited the coaſt before the arrival of the *Europeans*, have made oyſters and other ſhell fiſh their chief food; and at preſent whenever they come to a ſalt water where oyſters are to be got, they are very active in catching them, and ſell them in great quantities to other *Indians* who live higher up the country: for this reaſon you ſee immenſe numbers of oyſter and muſcle ſhells piled up near ſuch places, where you are certain that the *Indians* formerly built their huts. This circumſtance ought to make us cautious in maintaining that in all places on the ſea ſhore, or higher up in the country, where ſuch heaps of ſhells are to be met with, that the latter have lain there ever ſince the time that thoſe places were overflowed by the ſea.

LOBSTERS are likewiſe plentyfully caught hereabouts, pickled much in the ſame way as oyſters, and ſent to ſeveral places. I was told of a very remarkable circumſtance about theſe lobſters, and I have afterwards frequently heard it mentioned. The coaſt of

of *New York* had already *European* inhabitants for a conſiderable time, yet no lobſters were to be met with on that coaſt; and though the people fiſhed ever ſo often, they could never find any ſigns of lobſters being in this part of the ſea: they were therefore continually brought in great wellboats from *New England*, where they are plentiful; but it happened that one of theſe wellboats broke in pieces near *Hellgate*, about ten *Engliſh* miles from *New York*, and all the lobſters in it got off. Since that time they have ſo multiplied in this part of the ſea, that they are now caught in the greateſt abundance.

November the 1ſt. A KIND of cold fever, which the *Engliſh* in this country call *Fever and Ague*, is very common in ſeveral parts of the *Engliſh* colonies. There are however other parts, where the people have never felt it. I will in the ſequel deſcribe the ſymptoms of this diſeaſe at large. Several of the moſt conſiderable inhabitants of this town, aſſured me that this diſeaſe was not near ſo common in *New York*, as it is in *Penſylvania*, where ten were ſeized by it, to one in the former province; therefore they were of opinion, that this diſeaſe was occaſioned by the vapours ariſing from ſtagnant freſh water, from

marſhes, and from rivers; for which reaſon thoſe provinces ſituated on the ſea ſhore, could not be ſo much affected by it. However the careleſneſs with which people eat quantities of melons, water melons, peaches, and other juicy fruit in ſummer, was reckoned to contribute much towards the progreſs of this fever; and repeated examples confirmed the truth of this opinion. The jeſuit's bark was reckoned a good remedy againſt it. It has however often been found to have operated contrary to expectation, though I am ignorant whether it was adulterated, or whether ſome miſtake had been committed in the manner of taking it. Mr. *Davis van Horne*, a merchant, told me that he cured himſelf and ſeveral other people of this fever, by the leaves of the common *Garden Sage*, or *Salvia officinalis* of *Linnæus*. The leaves are cruſhed or pounded in a mortar, and the juice is preſſed out of them; this is continued till they get a ſpoonful of the liquid, which is mixed with lemon juice. This draught is taken about the time that the cold fit comes on; and after taking it three or four times, the fever does not come again.

The bark of the white oak was reckoned the beſt remedy which had as yet been found againſt the dyſentery. It is reduced to a powder,

powder, and then taken: ſome people aſſured me that in caſes where nothing would help, this remedy had given a certain and ſpeedy relief. The people in this place likewiſe make uſe of this bark (as is uſually done in the *Engliſh* colonies) to dye wool a brown colour, which looks like that of bohea tea, and does not fade by being expoſed to the ſun. Among the numerous ſhells which are found on the ſea ſhore, there are ſome which by the *Engliſh* here are called *Clams*, and which bear ſome reſemblance to the human ear. They have a conſiderable thickneſs, and are chiefly white, excepting the pointed end, which both without and within has a blue colour, between purple and violet. They are met with in vaſt numbers on the ſea ſhore of *New York*, *Long Iſland*, and other places. The ſhells contain a large animal, which is eaten both by the *Indians* and *Europeans* ſettled here.

A CONSIDERABLE commerce is carried on in this article, with ſuch Indians as live further up the country. When theſe people inhabited the coaſt, they were able to catch their own clams, which at that time made a great part of their food; but at preſent this is the buſineſs of the *Dutch* and *Engliſh*, who live in *Long Iſland* and other

maritime provinces. As ſoon as the ſhells are caught, the fiſh is taken out of them, drawn upon a wire, and hung up in the open air, in order to dry by the heat of the ſun. When this is done, the fiſh is put into proper veſſels, and carried to *Albany* upon the river *Hudſon*; there the Indians buy them, and reckon them one of their beſt diſhes. Beſides the *Europeans*, many of the native Indians come annually down to the ſea ſhore, in order to catch clams, proceeding with them afterwards in the manner I have juſt deſcribed.

The ſhells of theſe clams are uſed by the Indians as money, and make what they call their wampum; they likewiſe ſerve their women for an ornament, when they intend to appear in full dreſs. Theſe wampums are properly made of the purple parts of the ſhells, which the Indians value more than the white parts. A traveller, who goes to trade with the Indians, and is well ſtocked with them, may become a conſiderable gainer; but if he take gold coin, or bullion, he will undoubtedly be a loſer; for the Indians who live farther up the country, put little or no value upon theſe metals which we reckon ſo precious, as I have frequently obſerved in the courſe of my travels. The Indians formerly made their

their own wampums, though not without a deal of trouble: but at preſent the *Europeans* employ themſelves that way; eſpecially the inhabitants of *Albany*, who get a conſiderable profit by it. In the ſequel I intend to relate the manner of making the wampum.

November the 2d. BESIDES the different ſects of chriſtians, there are many Jews ſettled in *New York*, who poſſeſs great privileges. They have a ſynagogue and houſes, and great country ſeats of their own property, and are allowed to keep ſhops in town. They have likewiſe ſeveral ſhips, which they freight and ſend out with their own goods. In fine they enjoy all the privileges common to the other inhabitants of this town and province.

DURING my reſidence at *New York*, this time and in the two next years, I was frequently in company with Jews. I was informed among other things, that theſe people never boiled any meat for themſelves on ſaturday, but that they always did it the day before; and that in winter they kept a fire during the whole ſaturday. They commonly eat no pork; yet I have been told by ſeveral men of credit, that many of them (eſpecially among the young Jews) when travelling, did not not make the leaſt diffi-

culty about eating this, or any other meat that was put before them; even though they were in company with chriſtians. I was in their ſynagogue laſt evening for the firſt time, and this day at noon I viſited it again, and each time I was put into a particular ſeat which was ſet apart for ſtrangers or chriſtians. A young *Rabbi* read the divine ſervice, which was partly in Hebrew, and partly in the Rabinical dialect. Both men and women were dreſſed entirely in the *Engliſh* faſhion; the former had all of them their hats on, and did not once take them off during ſervice. The galleries, I obſerved, were appropriated to the ladies, while the men ſat below. During prayers the men ſpread a white cloth over their heads; which perhaps is to repreſent ſack cloth. But I obſerved that the wealthier ſort of people had a much richer cloth than the poorer ones. Many of the men had Hebrew books, in which they ſang and read alternately. The *Rabbi* ſtood in the middle of the ſynagogue, and read with his face turned towards the eaſt; he ſpoke however ſo faſt, as to make it almoſt impoſſible for any one to underſtand what he ſaid.*

NEW

* As there are no Jews in *Sweden*, Prof. *Kalm* was an utter ſtranger to their manners and religious cuſtoms, and therefore relates them as a kind of novelty. F.

NEW YORK, the capital of a province of the ſame name is ſituated under forty deg. and forty min. north lat. and forty ſeven deg. and four min. of weſtern long. from *London*; and is about ninety ſeven *Engliſh* miles diſtant from *Philadelphia*. The ſituation of it is extremely advantageous for trade: for the town ſtands upon a point which is formed by two bays; into one of which the river *Hudſon* diſcharges itſelf, not far from the town; *New York* is therefore on three ſides ſurrounded with water: the ground it is built on, is level in ſome parts, and hilly in others: the place is generally reckoned very wholeſome.

THE town was firſt founded by the *Dutch*: this, it is ſaid, was done in the year 1623, when they were yet maſters of the country: they called it *New Amſterdam*, and the country itſelf *New Holland*. The *Engliſh*, towards the end of the year 1664, taking poſſeſſion of it under the conduct of *Des Cartes*, and keeping it by the virtue of the next treaty of peace, gave the name of *New York* to both the town, and the province belonging to it: in ſize it comes neareſt to *Boſton* and *Philadelphia*. But with regard to its fine buildings, its opulence, and extenſive commerce, it diſputes the preference with

them: at preſent it is about half as big again as *Gothenburgh* in *Sweden*.

The ſtreets do not run ſo ſtraight as thoſe of *Philadelphia*, and have ſometimes conſiderable bendings: however they are very ſpacious and well built, and moſt of them are paved, except in high places, where it has been found uſeleſs. In the chief ſtreets there are trees planted, which in ſummer give them a fine appearance, and during the exceſſive heat at that time, afford a cooling ſhade: I found it extremely pleaſant to walk in the town, for it ſeemed quite like a garden: the trees which are planted for this purpoſe are chiefly of two kinds. The *Water beech*, or *Linnæus*'s *Platanus occidentalis*, are the moſt numerous, and give an agreeable ſhade in ſummer, by their great and numerous leaves. The *Locuſt tree*, or *Linnæus*'s *Robinia Pſeud-Acacia* is likewiſe frequent: its fine leaves, and the odoriferous ſcent which exhales from its flowers, make it very proper for being planted in the ſtreets near the houſes, and in gardens. There are likewiſe lime trees and elms, in theſe walks, but they are not by far ſo frequent as the others: one ſeldom met with trees of the ſame ſort next to each other, they being in general planted alternately.

Besides

BESIDES numbers of birds of all kinds which make theſe trees their abode, there are likewiſe a kind of frogs which frequent them in great numbers in ſummer, they are Dr. *Linnæus*'s *Rana arborea*, and eſpecially the *American* variety of this animal. They are very clamorous in the evening and in the nights (eſpecially when the days had been hot, and a rain was expected) and in a manner drown the ſinging of the birds. They frequently make ſuch a noiſe, that it is difficult for a perſon to make himſelf heard.

MOST of the houſes are built of bricks; and are generally ſtrong and neat, and ſeveral ſtories high. Some had, according to old architecture, turned the gable-end towards the ſtreets; but the new houſes were altered in this reſpect. Many of the houſes had a balcony on the roof, on which the people uſed to ſit in the evenings in the ſummer ſeaſon; and from thence they had a pleaſant view of a great part of the town, and likewiſe of part of the adjacent water and of the oppoſite ſhore. The roofs are commonly covered with tiles or ſhingles: the latter of which are made of the white firtree, or *Pinus Strobus* (*Linn.* ſp. plant. page 1419.) which grows higher up in the country. The inhabitants are of opinion that

that a roof made of theſe ſhingles is as durable as one made in *Penſylvania* of the *White Cedar*, or *Cupreſſus thyoides* (*Linn.* ſpec. plant. page 1422.) The walls were whitewaſhed within, and I did not any where ſee hangings, with which the people in this country ſeem in general to be but little acquainted. The walls were quite covered with all ſorts of drawings and pictures in ſmall frames. On each ſide of the chimnies they had uſually a ſort of alcove; and the wall under the windows was wainſcoted, and had benches placed near it. The alcoves, and all the wood work were painted with a bluiſh grey colour.

THERE are ſeveral churches in the town, which deſerve ſome attention. 1. *The Engliſh Church*, built in the year 1695, at the weſt end of the town, conſiſts of ſtone, and has a ſteeple with a bell. 2. *The new Dutch Church*, which is likewiſe built of ſtone, is pretty large, and is provided with a ſteeple; it alſo has a clock, which is the only one in the town. This church ſtands almoſt due from north to ſouth. No particular point of the compaſs has here been in general attended to in erecting ſacred buildings. Some churches, ſtand as is uſual from eaſt to weſt, others from ſouth to north, and others in different poſitions.

poſitions. In this *Dutch* church, there is neither altar, veſtry, choir, ſconces, nor paintings. Some trees are planted round it, which make it look as if it was built in a wood. 3. *The old Dutch church*, which is alſo built of ſtone. It is not ſo large as the new one. It was painted in the inſide, though without any images, and adorned with a ſmall organ, of which governor *Burnet* made them a preſent. The men for the moſt part ſit in the gallery, and the women below. 4. *The Preſbyterian Church*, which is pretty large, and was built but lately. It is of ſtone, and has a ſteeple and a bell in it. 5. *The German Lutheran Church*. 6. *The German Reformed Church*. 7. *The French Church*, for proteſtant refugees. 8. *The Quaker's Meeting houſe*. 9. To theſe may be added the *Jewiſh Synagogue*, which I mentioned before.

TOWARDS the ſea, on the extremity of the promontory is a pretty good fortreſs, called *Fort George*, which entirely commands the port, and can defend the town, at leaſt from a ſudden attack on the ſea ſide. Beſides that, it is likewiſe ſecured on the north or towards the ſhore, by a palliſade, which however (as for a conſiderable time the people have had nothing to fear from

from an enemy) is in many places in a very bad ſtate of defence.

THERE is no good water to be met with in the town itſelf, but at a little diſtance there is a large ſpring of good water, which the inhabitants take for their tea, and for the uſes of the kitchen. Thoſe however, who are leſs delicate in this point, make uſe of the water from the wells in town, though it be very bad. This want of good water lies heavy upon the horſes of the ſtrangers that come to this place; for they do not like to drink the water from the wells in the town.

THE *port* is a good one: ſhips of the greateſt burthen can lie in it, quite cloſe up to the bridge: but its water is very ſalt, as the ſea continually comes in upon it; and therefore is never frozen, except in extraordinary cold weather. This is of great advantage to the city and its commerce; for many ſhips either come in or go out of the port at any time of the year, unleſs the winds be contrary; a convenience, which as I have before obſerved, is wanting at *Philadelphia*. It is ſecured from all violent hurricanes from the ſouth-eaſt by *Long Iſland* which is ſituated juſt before the town: therefore only the ſtorms from the ſouthweſt are dangerous to the ſhips which ride at anchor

anchor here, becauſe the port is open only on that ſide. The entrance however has its faults: one of them is, that no men of war can paſs through it; for though the water is pretty deep, yet it is not ſufficiently ſo for great ſhips. Sometimes even merchant ſhips of a large ſize have by the rolling of the waves and by ſinking down between them, ſlightly touched the bottom, though without any bad conſequences. Beſides this, the canal is narrow; and for this reaſon many ſhips have been loſt here, becauſe they may be eaſily caſt upon a ſand, if the ſhip is not well piloted. Some old people, who had conſtantly been upon this canal, aſſured me, that it was neither deeper, nor ſhallower at preſent, than in their youth.

The common difference between high and low water at *New York*, amounts to about ſix feet, *Engliſh* meaſure. But at a certain time in every month, when the tide flows more than commonly, the difference in the height of the water is ſeven feet.

New York probably carries on a more extenſive commerce, than any town in the *Engliſh* North American provinces; at leaſt it may be ſaid to equal them: *Boſton* and *Philadelphia* however come very near up to it. The trade of *New York* extends to many

many places, and it is ſaid they ſend more ſhips from thence to *London*, than they do from *Philadelphia*. They export to that capital all the various ſorts of ſkins which they buy of the Indians, ſugar, logwood, and other dying woods, rum, mahogany, and many other goods which are the produce of the *Weſt Indies*; together with all the ſpecie which they get in the courſe of trade. Every year they build ſeveral ſhips here, which are ſent to *London*, and there ſold; and of late years they have ſhipped a quantity of iron to *England*. In return for theſe, they import from *London* ſtuffs and every other article of *Engliſh* growth or manufacture, together with all ſorts of foreign goods. *England*, and eſpecially *London*, profits immenſely by its trade with the *American* colonies; for not only *New York*, but likewiſe all the other *Engliſh* towns on the continent, import ſo many articles from *England*, that all their ſpecie, together with the goods which they get in other countries, muſt altogether go to *Old England*, in order to pay the amount, to which they are however inſufficient. From hence it appears how much a well regulated colony contributes to the increaſe and welfare of its mother country.

NEW YORK ſends many ſhips to the *Weſt Indies*

Indies, with flour, corn, biſcuit, timber, tuns, boards, fleſh, fiſh, butter, and other proviſions; together with ſome of the few fruits that grow here. Many ſhips go to *Boſton* in *New England*, with corn and flour, and take in exchange, fleſh, butter, timber, different ſorts of fiſh, and other articles, which they carry further to the *Weſt Indies*. They now and then take rum from thence, which is diſtilled there in great quantities, and ſell it here with a conſiderable advantage. Sometimes they ſend yachts with goods from *New York* to *Philadelphia*, and at other times yachts are ſent from *Philadelphia* to *New York*; which is only done, as appears from the gazettes, becauſe certain articles are cheaper at one place than at the other. They ſend ſhips to *Ireland* every year, laden with all kinds of *Weſt India* goods; but eſpecially with linſeed, which is reaped in this province. I have been aſſured, that in ſome years no leſs than ten ſhips have been ſent to *Ireland*, laden with nothing but linſeed; becauſe it is ſaid the flax in *Ireland* does not afford good ſeed. But probably the true reaſon is this: the people of *Ireland*, in order to have the better flax, make uſe of the plant before the ſeed is ripe, and therefore are obliged to ſend for foreign ſeed; and hence

it

it becomes one of the chief articles in trade.

At this time a buſhel of linſeed is ſold for eight ſhillings of *New York* currency, or exactly a piece of eight.

The goods which are ſhipped to the *Weſt Indies*, are ſometimes paid for with ready money, and ſometimes with *Weſt India* goods, which are either firſt brought to *New York*, or immediately ſent to *England* or *Holland*. If a ſhip does not chuſe to take in *Weſt India* goods in its return to *New York*, or if no body will freight it, it often goes to *Newcaſtle* in *England* to take in coals for ballaſt, which when brought home ſell for a pretty good price. In many parts of the town coals are made uſe of, both for kitchen fires, and in rooms, becauſe they are reckoned cheaper than wood, which at preſent coſts thirty ſhillings of *New York* currency per fathom; of which meaſure I have before made mention. *New York* has likewiſe ſome intercourſe with *South Carolina*; to which it ſends corn, flour, ſugar, rum, and other goods, and takes rice in return, which is almoſt the only commodity exported from *South Carolina*.

The goods with which the province of *New York* trades are not very numerous. They chiefly export the ſkins of animals, which

which are bought of the Indians about *Oſwego*; great quantities of boards, coming for the moſt part from *Albany*; timber and ready made lumber, from that part of the country which lies about the river *Hudſon*; and laſtly wheat, flour, barley, oats and other kinds of corn, which are brought from *New Jerſey* and the cultivated parts of this province. I have ſeen yachts from *New Brunſwick*, laden with wheat which lay looſe on board, and with flour packed up into tuns; and alſo with great quantities of linſeed. *New York* likewiſe exports ſome fleſh and other proviſions out of its own province, but they are very few; nor is the quantity of peaſe which the people about *Albany* bring much greater. Iron however may be had more plentifully, as it is found in ſeveral parts of this province, and is of a conſiderable goodneſs; but all the other products of this country are of little account.

Most of the wine, which is drank here and in the other colonies is brought from the Iſle of *Madeira* and is very ſtrong and fiery.

No manufactures of note have as yet been eſtabliſhed here; at preſent they get all manufactured goods, ſuch as woollen

and linen cloth, &c. from *England*, and eſpecially from *London*.

THE river *Hudſon* is very convenient for the commerce of this city; as it is navigable for near a hundred and fifty *Engliſh* miles up the country, and falls into the bay not far from the town, on its weſtern ſide. During eight months of the year this river is full of yachts, and other greater and leſſer veſſels, either going to *New York* or returning from thence, laden either with inland or foreign goods.

I CANNOT make a juſt eſtimate of the ſhips that annually come to this town or ſail from it. But I have found by the *Penſylvania* gazettes that from the firſt of *December* in 1729, to the fifth of *December* in the next year, 211 ſhips entered the port of *New York*, and 222 cleared it; and ſince that time there has been a great increaſe of trade here.

THE country people come to market in *New York*, twice a week much in the ſame manner, as they do at *Philadelphia*; with this difference, that the markets are here kept in ſeveral places.

THE governor of the province of *New York*, reſides here, and has a palace in the fort. Among thoſe who have been entruſted with this poſt, *William Burnet* deſerves

to

to be had in perpetual remembrance. He was one of the ſons of Dr. *Thomas Burnet* (ſo celebrated on account of his learning) and ſeemed to have inherited the knowledge of his father. But his great aſſiduity in promoting the welfare of this province, is what makes the principal merit of his character. The people of *New York* therefore ſtill reckon him the beſt governor they ever had, and think that they cannot praiſe his ſervices too much. The many aſtronomical obſervations which he made in theſe parts, are inſerted in ſeveral *Engliſh* works. In the year 1727, at the acceſſion of king George the II. to the throne of *Great Britain*, he was appointed governor of *New England*. In conſequence of this he left *New York*, and went to *Boſton*, where he died univerſally lamented, on the 7th. of *September* 1729.

An aſſembly of deputies from all the particular diſtricts of the province of *New York*, is held at *New York* once or twice every year. It may be looked upon as a parliament or dyet in miniature. Every thing relating to the good of the province is here debated. The governor calls the aſſembly, and diſſolves it at pleaſure: this is a power which he ought only to make uſe of, either when no farther debates are

neceſſary, or when the members are not ſo unanimous in the ſervice of their king and country as is their duty: it frequently however happens, that, led aſide by caprice or by intereſted views, he exerts it to the prejudice of the province. The colony has ſometimes had a governor, whoſe quarrels with the inhabitants, have induced their repreſentatives, or the members of the aſſembly, through a ſpirit of revenge, to oppoſe indifferently every thing he propoſed, whether it was beneficial to the country or not. In ſuch caſes the governor has made uſe of his power; diſſolving the aſſembly, and calling another ſoon after, which however he again diſſolved upon the leaſt mark of their ill humour. By this means he ſo much tired them, by the many expences which they were forced to bear in ſo ſhort a time, that they were at laſt glad to unite with him, in his endeavours for the good of the province. But there have likewiſe been governors who have called aſſemblies and diſſolved them ſoon after, merely becauſe the repreſentatives did not act according to their whims, or would not give their aſſent to propoſals which were perhaps dangerous or hurtful to the common welfare.

The king appoints the governor according

ing to his royal pleaſure; but the inhabitants of the province make up his excellency's ſalary. Therefore a man entruſted with this place has greater or leſſer revenues, according as he knows how to gain the confidence of the inhabitants. There are examples of governors in this, and other provinces of *North America*, who by their diſſenſions with the inhabitants of their reſpective governments, have loſt their whole ſalary, his Majeſty having no power to make them pay it. If a governor had no other reſource in theſe circumſtances, he would be obliged either to reſign his office, or to be content with an income too ſmall for his dignity; or elſe to conform himſelf in every thing to the inclinations of the inhabitants: but there are ſeveral ſtated profits, which in ſome meaſure make up for this. 1. No one is allowed to keep a public houſe without the governor's leave; which is only to be obtained by the payment of a certain fee, according to the circumſtances of the perſon. Some governors therefore, when the inhabitants refuſed to pay them a ſalary, have hit upon the expedient of doubling the number of inns in their province. 2. Few people who intend to be married, unleſs they be very poor, will have their banns publiſhed from the

pulpit; but inſtead of this they get licences from the governor, which impower any miniſter to marry them. Now for ſuch a licence the governor receives about half a guinea, and this collected throughout the whole province, amounts to a conſiderable ſum. 3. The governor ſigns all paſſports, and eſpecially of ſuch as go to ſea; and this gives him another means of ſupplying his expences. There are ſeveral other advantages allowed to him, but as they are very trifling, I ſhall omit them.

At the above aſſembly the old laws are reviewed and amended, and new ones are made: and the regulation and circulation of coin, together with all other affairs of that kind are there determined. For it is to be obſerved that each *Engliſh* colony in *North America* is independent of the other, and that each has its proper laws and coin, and may be looked upon in ſeveral lights, as a ſtate by itſelf. From hence it happens, that in time of war, things go on very ſlowly and irregularly here: for not only the ſenſe of one province is ſometimes directly oppoſite to that of another; but frequently the views of the governor, and thoſe of the aſſembly of the ſame province, are quite different: ſo that it is eaſy to ſee, that, while the people are quarrelling about the

the beſt and cheapeſt manner of carrying on the war, an enemy has it in his power to take one place after another. It has commonly happened that whilſt ſome provinces have been ſuffering from their enemies, the neighbouring ones were quiet and inactive, and as if it did not in the leaſt concern them. They have frequently taken up two or three years in conſidering whether they ſhould give aſſiſtance to an oppreſſed ſiſter colony, and ſometimes they have expreſly declared themſelves againſt it. There are inſtances of provinces who were not only neuter in theſe circumſtances, but who even carried on a great trade with the power which at that very time was attacking and laying waſte ſome other provinces.

The *French* in *Canada*, who are but an inconſiderable body, in compariſon with the *Engliſh* in *America*, have by this poſition of affairs been able to obtain great Advantages in times of war; for if we judge from the number and power of the *Engliſh*, it would ſeem very eaſy for them to get the better of the *French* in *America*.*

* This has really happened by a greater union and exertion of power from the colonies and the mother country; ſo that *Canada* has been conquered and its poſſeſſion has been confirmed to *Great Britain* in the laſt peace. F.

It is however of great advantage to the crown of *England*, that the *North American* colonies are near a country, under the government of the *French*, like *Canada*. There is reaſon to believe that the king never was earneſt in his attempts to expel the *French* from their poſſeſſions there; though it might have been done with little difficulty. For the *Engliſh* colonies in this part of the world have encreaſed ſo much in their number of inhabitants, and in their riches, that they almoſt vie with *Old England*. Now in order to keep up the authority and trade of their mother country, and to anſwer ſeveral other pupoſes, they are forbid to eſtabliſh new manufactures, which would turn to the diſadvantage of the *Britiſh* commerce: they are not allowed to dig for any gold or ſilver, unleſs they ſend them to *England* immediately: they have not the liberty of trading to any parts that do not belong to the *Britiſh* dominions, excepting ſome ſettled places, and foreign traders are not allowed to ſend their ſhips to them. Theſe and ſome other reſtrictions, occaſion the inhabitants of the *Engliſh* colonies to grow leſs tender for their mother country. This coldneſs is kept up by the many foreigners ſuch as *Germans*, *Dutch* and *French* ſettled here, and living among

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the *Engliſh*, who commonly have no particular attachment to *Old England*; add to this likewiſe that many people can never be contented with their poſſeſſions, though they be ever ſo great, and will always be deſirous of getting more, and of enjoying the pleaſure which ariſes from changing; and their over great liberty, and their luxury often lead them to licentiouſneſs.

I HAVE been told by *Engliſhmen*, and not only by ſuch as were born in *America*, but even by ſuch as came from *Europe*, that the *Engliſh* colonies in *North-America*, in the ſpace of thirty or fifty years, would be able to form a ſtate by themſelves, entirely independent on *Old England*. But as the whole country which lies along the ſea ſhore, is unguarded, and on the land ſide is harraſſed by the *French*, in times of war theſe dangerous neighbours are ſufficient to prevent the connection of the colonies with their mother country from being quite broken off. The *Engliſh* government has therefore ſufficient reaſon to conſider the *French* in *North-America*, as the beſt means of keeping the colonies in their due ſubmiſſion. But, I am almoſt gone too far from my purpoſe; I will therefore finiſh my obſervations on *New York*.

THE declination of the magnetic needle, in

in this town was obſerved by *Philip Wells*, the chief engineer of the province of *New York*, in the year 1686, to be eight deg. and forty-five min. to the weſtward. But in 1723, it was only ſeven deg. and twenty min. according to the obſervations of governor *Burnet*.

FROM hence we may conclude that in thirty-eight years the magnet approaches about one deg. and twenty five min. nearer to the true north; or, which is the ſame thing, about two min. annually. Mr. *Alexander*, a man of great knowledge in aſtronomy and in mathematics, aſſured me from ſeveral obſervations, that in the year 1750, on the eighteenth of *September* the deviation was to be reckoned ſix deg. and twenty two min.

THERE are two printers in the town, and every week ſome *Engliſh* gazettes are publiſhed, which contain news from all parts of the world.

THE winter is much more ſevere here, than in *Penſylvania*; it being nearly as cold as in ſome of the provinces of *Sweden:* its continuance however is much ſhorter than with us: their ſpring is very early and their autumn very late, and the heat in ſummer is exceſſive. For this reaſon, the melons ſown in the fields are ripe at the beginning of

of *Auguſt*; whereas we can hardly bring them ſo ſoon to maturity under glaſſes and on hot beds. The cold of the winter, I cannot juſtly determine, as the meteorological obſervations which were communicated to me, were all calculated after thermometers, which were ſo placed in the houſes, that the air could not freely come at them. The ſnow lies for ſome months together upon the ground; and ſledges are made uſe of here as in *Sweden*, but they are rather too bulky. The river *Hudſon* is about an Engliſh mile and a half broad at its mouth: the difference between the higheſt flood and the loweſt ebb is between ſix and ſeven feet, and the water is very brackiſh: yet the ice ſtands in it not only one but even ſeveral months: it has ſometimes a thickneſs of more than two feet.

The inhabitants are ſometimes greatly troubled with *Muſquitoes*. They either follow the hay which is made near the town, in the low meadows which are quite penetrated with ſalt water; or they accompany the cattle at night when it is brought home. I have myſelf experienced, and have obſerved in others, how much theſe little animalcules can disfigure a perſon's face during a ſingle night; for the ſkin is ſometimes

ſo

ſo covered over with little bliſters from their ſtings, that people are aſhamed to appear in public. The water melons which are cultivated near the town grow very large: they are extremely delicious, and are better than in other parts of *North America*; though they are planted in the open fields and never in a hot-bed. I ſaw a water melon at Governor *Clinton*'s in *September* 1750, which weighed forty ſeven Engliſh pounds, and at a merchant's in town another of forty two pounds weight: however they were reckoned the biggeſt ever ſeen in this country.

In the year 1710, five kings, or *Sachems* of the *Iroquois* went from hence to *England*, in order to engage *Queen Anne* to make an alliance with them againſt the *French*. Their names, dreſs, reception at court, ſpeeches to the Queen, opinion of *England* and of the *European* manners, and ſeveral other particulars about them are ſufficiently known from other writings; it would therefore be here unneceſſary to enlarge about them. The kings or *Sachems* of the *Indians*, have commonly no greater authority over their ſubjects than conſtables in a meeting of the inhabitants of a pariſh, and hardly ſo much. On my travels through the country of theſe *Indians*, I had never any occaſion

occaſion to go and wait upon the *Sachems*; for they always came into my habitation without being aſked: theſe viſits they commonly paid in order to get a glaſs or two of brandy, which they value above any thing they know. One of the five *Sachems* mentioned above, died in *England*; the others returned ſafe.

THE firſt coloniſts in *New York* were *Dutchmen*: when the town and its territories were taken by the *Engliſh*, and left them by the next peace in exchange for *Surinam*, the old inhabitants were allowed either to remain at *New York*, and to enjoy all the priviledges and immunities which they were poſſeſſed of before, or to leave the place with all their goods: moſt of them choſe the former; and therefore the inhabitants both of the town and of the province belonging to it, are yet for the greateſt part *Dutchmen*; who ſtill, eſpecially the old people, ſpeak their mother tongue.

THEY begin however by degrees to change their manners and opinions; chiefly indeed in the town and in its neighbourhood: for moſt of the young people now ſpeak principally *Engliſh*, and go only to the *Engliſh* church; and would even take it amiſs, if they were called *Dutchmen* and not *Engliſhmen*.

THOUGH

THOUGH the province of *New York* has been inhabited by *Europeans*, much longer than *Penſylvania*, yet it is not by far ſo populous as that colony. This cannot be aſcribed to any particular diſcouragement ariſing from the nature of the ſoil; for that is pretty good: but I was told of a very different reaſon, which I will mention here. In the reign of *Queen Anne* about the year 1709, many *Germans* came hither, who got a tract of land from the government on which they might ſettle. After they had lived there for ſome time, and had built houſes and churches, and made corn-fields and meadows, their liberties and privileges were infringed, and under ſeveral pretences they were repeatedly deprived of parts of their land. This at laſt rouzed the *Germans*; they returned violence for violence, and beat thoſe who thus robbed them of their poſſeſſions. But theſe proceedings were looked upon in a very bad light by the government: the moſt active people among the *Germans* being taken up, they were very roughly treated, and puniſhed with the utmoſt rigour of the law. This however ſo far exaſperated the reſt, that the greater part of them left their houſes and fields, and went to ſettle in *Penſylvania*: there they were exceedingly well received, got a conſiderable tract of land, and

and were indulged in great privileges which were given them forever. The *Germans* not ſatisfied with being themſelves removed from *New York*, wrote to their relations and friends and adviſed them, if ever they intended to come to *America*, not to go to *New York*, where the government had ſhewn itſelf ſo unequitable. This advice had ſuch influence, that the *Germans*, who afterwards went in great numbers to *North America*, conſtantly avoided *New York* and always went to *Penſylvania*. It ſometimes happened that they were forced to go on board ſuch ſhips as were bound to *New York*; but they were ſcarce got on ſhore, when they haſtened on to *Penſylvania* in ſight of all the inhabitants of *New York*.

But the want of people in this province may likewiſe be accounted for in a different manner. As the *Dutch*, who firſt cultivated this country, obtained the liberty of ſtaying here by the treaty with *England*, and of enjoying all their privileges and advantages without the leaſt limitation, each of them took a very large piece of ground for himſelf, and many of the more powerful heads of families made themſelves the poſſeſſors and maſters of a country of as great an extent as would be ſufficient to form a middling and even a great pariſh. Moſt of

of them being very rich, their envy of the *Engliſh* led them not to ſell them any land, but at an exceſſive rate; a practice which is ſtill punctually obſerved among their deſcendants. The *Engliſh* therefore as well as people of different nations, have little encouragement to ſettle here. On the other hand they have ſufficient opportunity in the other provinces, to purchaſe land at a more moderate price, and with more ſecurity to themſelves. It is not then to be wondered, that ſo many parts of *New York* are ſtill uncultivated, and have entirely the appearance of deſarts. This inſtance may teach us how much a ſmall miſtake in a government will injure population.

November the 3d. About noon we ſet out from *New York* on our return, and continuing our journey, we arrived at *Philadelphia* on the fifth of *November*.

In the neighbourhood of this capital (of *Penſylvania*) the people had a month ago made their cyder, which they were obliged to do, becauſe their apples were ſo ripe as to drop from the trees. But on our journey through *New York* we obſerved the people ſtill employed in preſſing out the cyder. This is a plain proof that in *Penſylvania* the apples are ſooner ripe than in *New York*; but whether this be owing to the nature

RACOON.

AMERICAN POLE-CAT.

nature of the ſoil, or a greater heat of the ſummer in *Philadelphia*, or to ſome other cauſe I know not. However there is not the leaſt advantage in making cyder ſo early: for long experience had taught the huſbandmen that it is worſe for being made early in the year; the great heat in the beginning of autumn being ſaid to hinder the fermentation of the juice.

THERE is a certain quadruped which is pretty common not only in *Penſylvania*, but likewiſe in other provinces both of *South* and *North America*, and goes by the name of *Polecat* among the *Engliſh*. In *New York* they generally call it *Skunk*. The *Swedes* here by way of nickname called it *Fiſkatta*, on account of the horrid ſtench it ſometimes cauſes as I ſhall preſently ſhow. The *French* in *Canada*, for the ſame reaſon call it *Bête puante* or ſtinking animal, and *Enfant du diable* or child of the devil. Some of them likewiſe call it *Pekan*: *Cateſby in his Natural Hiſtory of Carolina*, has deſcribed it in Vol. 2. p. 62. by the name of *Putorius Americanus ſtriatus* and drawn it plate 62. Dr. *Linnæus* calls it *Viverra Putorius*.* This animal, which is

* OF this animal and of the above-mentioned *Racoon* is a repreſentation given plate 2. both from original drawings; the *German* and the *Swediſh* edition of Prof. *Kalm*'s work being both without this plate. F.

very ſimilar to the *Marten*, is of about the ſame ſize and commonly black: on the back it has a longitudinal white ſtripe and two others on each ſide, parallel to the former. Sometimes but very ſeldom, ſome are ſeen which are quite white. On our return to *Philadelphia* we ſaw one of theſe animals not far from town near a farmer's houſe, killed by dogs. And afterwards I had during my ſtay in theſe parts ſeveral opportunities of ſeeing it and of hearing its qualities. It keeps its young ones in holes in the ground and in hollow trees; for it does not confine itſelf to the ground, but climbs up trees with the greateſt agility: it is a great enemy to birds; for it breaks their eggs and devours their young ones; and if it can get into a hen rooſt it ſoon deſtroys all its inhabitants.

This animal has a particular quality by which it is principally known; when it is purſued by men or dogs it runs at firſt as faſt as it can, or climbs upon a tree; but if it is ſo beſet by its purſuers, as to have no other way of making its eſcape, it ſquirts its urine upon them. This according to ſome it does by wetting its tail with the urine whence by a ſudden motion it ſcatters it abroad; but others believe, that it could ſend its urine equally far without the help of its tail; I find the former of theſe accounts

to

to be the moſt likely. For, ſome credible people aſſured me, that they have had their faces wetted with it all over; though they ſtood above eighteen feet off from the animal. The urine has ſo horrid a ſtench that nothing can equal it: it is ſomething like that of the *Craneſbill* or *Linnæus*'s *Geranium robertianum*, but infinitely ſtronger. If you come near a polecat when it ſpreads its ſtench, you cannot breathe for a while, and it ſeems as if you were ſtifled; and in caſe the urine comes into the eyes, a perſon is likely to be blinded. Many dogs that in a chace purſue the polecat very eagerly, run away as faſt as they can when they are wetted: however, if they be of the true breed, they will not give over the purſuit till they have caught and killed the polecat; but they are obliged now and then to rub their noſes in the ground in order to relieve themſelves.

CLOTHES which have been wetted by this animal retain the ſmell for more than a month; unleſs they be covered with freſh ſoil, and ſuffered to remain under it for twenty four hours together; when it will in a great meaſure be removed. Thoſe likewiſe who have got any of this urine upon their face and hands, rub them with looſe earth; and ſome even hold their hands in the ground for an hour; as waſhing will not help them

ſo ſoon. A certain man of rank who had by accident been wetted by the polecat, ſtunk ſo ill, that on going into a houſe, the people either ran away, or on his opening the door, rudely denied him entrance. Dogs that have hunted a polecat are ſo offenſive for ſome days afterwards, that they cannot be borne in the houſe. At *Philadelphia* I once ſaw a great number of people on a market day throwing at a dog that was ſo unfortunate as to have been engaged with a polecat juſt before, and to carry about him the tokens of its diſpleaſure. Perſons when travelling through a foreſt are often troubled with the ſtink which this creature makes; and ſometimes the air is ſo much infected that it is neceſſary to hold ones noſe. If the wind blows from the place where the polecat has been, or if it be quite calm, as at night, the ſmell is more ſtrong and diſagreeable.

In the winter of 1749, a polecat tempted by a dead lamb, came one night near the farm houſe where I then ſlept. Being immediately purſued by ſome dogs, it had recourſe to its uſual expedient in order to get rid of them. The attempt ſucceeded, the dogs not chooſing to continue the purſuit: the ſtink was ſo extremely great that, though I was at ſome diſtance it affected me in the ſame manner as if I had

had been ſtifled; and it was ſo diſagreeable to the cattle that it made them roar very loudly: however, by degrees it vaniſhed. Towards the end of the ſame year one of theſe animals got into our cellar, but no ſtench was obſerved, for it only vents that when it is purſued. The cook however found for ſeveral days together that ſome of the meat which was kept there was eaten; and ſuſpecting that it was done by the cat ſhe ſhut up all avenues, in order to prevent their getting at it. But the next night being awoke by a noiſe in the cellar, ſhe went down, and though it was quite dark, ſaw an animal with two ſhining eyes, which ſeemed to be all on fire; ſhe however reſolutely killed it, but not before the polecat had filled the cellar with a moſt dreadful ſtench. The maid was ſick of it for ſeveral days; and all the bread, fleſh, and other proviſions kept in the cellar were ſo penetrated with it, that we could not make the leaſt uſe of them, and were forced to throw them all away.

FROM an accident that happened at *New York* to one of my acquaintances, I conclude that the polecat either is not always very ſhy, or that it ſleeps very hard at night. This man coming home out of a wood in a ſummer evening, thought that he ſaw a plant

ſtanding before him; ſtooping to pluck it, he was to his coſt convinced of his miſtake, by being all on a ſudden covered with the urine of a polecat, whoſe tail as it ſtood upright, the good man had taken for a plant: the creature had taken its revenge ſo effectually that he was much at a loſs how to get rid of the ſtench.

However though theſe animals play ſuch diſagreeable tricks, yet the *Engliſh*, the *Swedes*, the *French*, and the *Indians* in theſe parts tame them. They follow their maſters like domeſtic animals, and never make uſe of their urine, except they be very much beaten or terrified. When the Indians kill ſuch a polecat, they always eat its fleſh, but when they pull off its ſkin, they take care to cut away the bladder, that the fleſh may not get a taſte from it. I have ſpoken with both *Engliſhmen* and *Frenchmen*, who aſſured me that they had eaten of it, and found it very good meat, and not much unlike the fleſh of a pig. The ſkin which is pretty coarſe, and has long hair, is not made uſe of by the *Europeans*; but the *Indians* prepare it with the hair on, and make tobacco pouches of it, which they carry before them.

November the 6th. In the evening I went out of town to Mr. *Bartram*, I found a man

a man with him, who lived in *Carolina* and I obtained ſeveral particulars about that province from him; a few of which I will here mention.

TAR, *pitch* and *rice* are the chief products of *Carolina*. The ſoil is very ſandy, and therefore many pines and firs grow in it, from which they make tar: the firs which are taken for this purpoſe are commonly ſuch as are dried up of themſelves; the people here in general not knowing how to prepare the firs by taking the bark off on one, or on ſeveral ſides, as they do in *Oſtrobothnia*. In ſome parts of *Carolina* they likewiſe make uſe of the branches. The manner of burning or boiling, as the man deſcribes it to me, is entirely the ſame as in *Finland*. The pitch is thus made: they dig a hole into the ground and ſmear the inſide well with clay, into which they pour the tar, and make a fire round it, which is kept up till the tar has got the conſiſtence of pitch. They make two kinds of tar in the *North American* colonies: one is the common tar, which I have above deſcribed, and which is made of the ſtems, branches, and roots of ſuch firs, as were already conſiderably dried out before; which is the moſt common way in this country. The other way in peeling the bark from

the firs on one ſide, and afterwards letting them ſtand another year; during which the reſin comes out between the cracks of the ſtem. The tree is then felled and burnt for tar; and the tar thus made is called *green tar*, not that there is that difference of colour in it, for in this reſpect they are both pretty much alike; but the latter is called ſo from being made of green and freſh trees; whereas *common tar* is made of dead trees: the burning is done in the ſame manner as in *Finland*. They uſe only black firs; for the white firs will not ſerve this purpoſe, though they are excellent for boards, maſts, &c. green tar is dearer than common tar. It is already a pretty general complaint that the fir woods are almoſt wholly deſtroyed by this practice.

Rice is planted in great quantity in *Carolina*: it ſucceeds beſt in marſhy and ſwampy grounds, which may be laid under water, and likewiſe ripens there the ſooneſt. Where theſe cannot be had, they muſt chooſe a dry ſoil; but the rice produced here will be much inferior to the other: the land on which it is cultivated muſt never be manured. In *Carolina* they ſow it in the middle of *April*, and it is ripe in *September*: it is planted in rows like peaſe, and commonly fifteen inches ſpace is left between

between the rows; as ſoon as the plants are come up, the field is laid under water. This not only greatly forwards the growth of the rice, but likewiſe kills all weeds, ſo as to render weeding unneceſſary. The ſtraw of rice is ſaid to be excellent food for cattle, who eat it very greedily. Rice requires a hot climate, and therefore it will not ſucceed well in *Virginia*, the ſummer there being too ſhort, and the winter too cold; and much leſs will it grow in *Penſylvania*. They are as yet ignorant in *Carolina* of the art of making arrack from rice: it is chiefly *South Carolina* that produces the greateſt quantity of rice; and on the other hand they make the moſt tar in *North Carolina*.

November the 7th. THE ſtranger from *Carolina* whom I have mentioned before, had met with many oyſter ſhells at the bottom of a well, ſeventy Engliſh miles diſtant from the ſea, and four from a river: they lay in a depth of fourteen Engliſh feet from the ſurface of the earth: the water in the well was brackiſh; but that in the river was freſh. The ſame man, had at the building of a ſaw-mill, a mile and a half from a river, found, firſt ſand, and then clay filled with oyſter ſhells. Under theſe he found ſeveral bills of ſea birds as he called them, which were already quite petrified: they were probably *Gloſſopetræ*.

THERE

THERE are two ſpecies of *foxes* in the *Engliſh* colonies, the one grey, and the other red: but in the ſequel I ſhall ſhew that there are others which ſometimes appear in *Canada*. The *grey foxes* are here conſtantly, and are very common in *Penſylvania* and in the ſouthern provinces: in the northern ones they are pretty ſcarce, and the *French* in *Canada*, call them *Virginian Foxes* on that account: in ſize they do not quite come up to our foxes. They do no harm to lambs; but they prey upon all ſorts of poultry, whenever they can come at them. They do not however ſeem to be looked upon as animals that cauſe a great deal of damage; for there is no reward given for killing them: their ſkin is greatly ſought for by hatters, who employ the hair in their work. People have their clothes lined with it ſometimes: the greaſe is uſed againſt all ſorts of rheumatic pains. Theſe foxes are ſaid to be leſs nimble than the red ones: they are ſometimes tamed; though they be not ſuffered to run about but are tied up. Mr. *Cateſby* has drawn and deſcribed this ſort of foxes in his *Natural hiſtory of Carolina*, by the name of the *grey American fox*, vol. 2. p. 78. tab. 78. A ſkin of it was ſold in *Philadelphia* for two ſhillings and ſix-pence in *Penſylvanian* currency.

THE

THE *red Foxes* are very ſcarce here: they are entirely the ſame with the *European* ſort. Mr. *Bartram*, and ſeveral others aſſured me, that according to the unanimous teſtimony of the *Indians*, this kind of foxes never was in the country, before the *Europeans* ſettled in it. But of the manner of their coming over I have two different accounts: Mr. *Bartram* and ſeveral other people were told by the *Indians*, that theſe foxes came into *America* ſoon after the arrival of the *Europeans*, after an extraordinary cold winter, when all the ſea to the northward was frozen: from hence they would infer, that they could perhaps get over to *America* upon the ice from *Greenland* or the northern parts of *Europe* and *Aſia*. But Mr. *Evans*, and ſome others aſſured me that the following account was ſtill known by the people. A gentleman of fortune in *New England*, who had a great inclination for hunting, brought over a great number of foxes from *Europe*, and let them looſe in his territories, that he might be able to indulge his paſſion for hunting.* This is ſaid to have happened almoſt

* NEITHER of theſe accounts appear to be ſatisfactory; and therefore I am inclined to believe that theſe red foxes originally came over from *Aſia*, (moſt probably from *Kamtchatka*

almoſt at the very beginning of *New England*'s being peopled with *European* inhabitants. Theſe foxes were believed to have ſo multiplied, that all the red foxes in the country were their offspring. At preſent they are reckoned among the noxious creatures in theſe parts; for they are not contented, as the grey foxes with killing fowl; but they likewiſe devour the lambs. In *Penſylvania* therefore there is a reward of two ſhillings for killing an old fox, and of one ſhilling for killing a young one. And in all the other provinces there are likewiſe rewards offer'd for killing them, Their ſkin is in great requeſt, and is ſold as dear as that of the grey foxes, that is two ſhillings

tchatka where this ſpecies is common, ſee *Miller*'s *Account of the Navigations of the Ruſſians*, &c.) though in remote times, and thus ſpread over *North America*. It is perhaps true that the *Indians* never took notice of them till the *Europeans* were ſettled among them; this, however, was becauſe they never had occaſion to uſe their ſkins: but when there was a demand for theſe they began to hunt them, and, as they had not been much accuſtomed to them before, they eſteemed them as a novelty. What gives additional confirmation to this is, that when the *Ruſſians* under Commodore *Bering* landed on the weſtern coaſt of *America*, they ſaw five red foxes which were quite tame, and ſeemed not to be in the leaſt afraid of men: now this might very well have been the caſe if we ſuppoſe them to have been for many generations in a place where no body diſturbed them; but we cannot account for it, if we imagine that they had been uſed to a country where there were many inhabitants, or where they had been much hunted. F.

lings and ſix-pence, in *Penſylvanian* currency.

They have two varieties of *Wolves* here, which however ſeem to be of the ſame ſpecies. For ſome of them are yellowiſh, or almoſt pale grey, and others are black or dark brown. All the old *Swedes* related, that during their childhood, and ſtill more at the arrival of their fathers, there were exceſſive numbers of wolves in the country, and that their howling and yelping might be heard all night. They likewiſe frequently tore in pieces, ſheep, hogs, and other young and ſmall cattle. About that time or ſoon after, when the *Swedes* and the *Engliſh* were quite ſettled here, the *Indians* were attacked by the ſmall pox: this diſeaſe they got from the *Europeans*, for they knew nothing of it before: it killed many hundreds of them, and moſt of the *Indians* of the country, then called *New Sweden* died of it. The wolves then came, attracted by the ſtench of ſo many corpſes, in ſuch great numbers that they devoured them all, and even attacked the poor ſick *Indians* in their huts, ſo that the few healthy ones had enough to do, to drive them away. But ſince that time they have diſappeared, ſo that they are now ſeldom ſeen, and it is very rarely that they commit any

any diſorders. This is attributed to the greater cultivation of the country, and to their being killed in great numbers. But further up the country, where it is not yet ſo much inhabited, they are ſtill very abundant. On the coaſts of *Penſylvania* and *New Jerſey*, the ſheep ſtay all night in the fields, without the people's fearing the wolves: however to prevent their multiplying too much, there is a reward of twenty ſhillings in *Penſylvania*, and of thirty in *New Jerſey*, for delivering in a dead wolf, and the perſon that brings it may keep the ſkin. But for a young wolf the reward is only ten ſhillings of the *Penſylvanian* currency. There are examples of theſe wolves being made as tame as dogs.

The *wild Oxen* have their abode principally in the woods of *Carolina*, which are far up in the country. The inhabitants frequently hunt them, and ſalt their fleſh like common beef, which is eaten by ſervants and the lower claſs of people. But the hide is of little uſe, having too large pores to be made uſe of for ſhoes. However the poorer people in *Carolina*, ſpread theſe hides on the ground inſtead of beds.

The *Viſcum filamentoſum*, or *Fibrous miſletoe*, is found in abundance in *Carolina*; the inhabitants make uſe of it as ſtraw in their beds,

beds, and to adorn their houſes; the cattle are very fond of it: it is likewiſe employed in packing goods.

The *Spartium ſcoparium* grew in Mr. *Bartram*'s garden from *Engliſh* ſeeds; he ſaid that he had ſeveral buſhes of it, but that the froſt in the cold winters here had killed moſt of them: they however grow ſpontaneouſly in *Sweden*.

Mr. *Bartram* had ſome *Truffles*, or *Linnæus*'s *Lycoperdon Tuber*, which he had got out of a ſandy ſoil in *New Jerſey*, where they are abundant. Theſe he ſhewed to his friend from *Carolina*, and aſked him whether they were the *Tuckahoo* of the Indians. But the ſtranger denied it, and added that though theſe truffles were likewiſe very common in *Carolina*, yet he had never ſeen them uſed any other way but in milk, againſt the dyſentery; and he gave us the following deſcription of the *Tuckahoo*. It grows in ſeveral ſwamps and marſhes, and is commonly plentiful. The hogs greedily dig up its roots with their noſes in ſuch places; and the Indians in *Carolina* likewiſe gather them in their rambles in the woods, dry them in the ſun ſhine, grind them and bake bread of them. Whilſt the root is freſh it is harſh and acrid, but being dried it loſes the greateſt part of its acrimony.

To

To judge by theſe qualities the *Tuckahoo* may very likely be the *Arum Virginianum*. Compare with this account, what ſhall be related in the ſequel of the *Tahim* and *Tuckah*.

AFTER dinner I again returned to town.

November the 8th. SEVERAL *Engliſh* and *Swediſh* oeconomiſts kept bee-hives, which afforded their poſſeſſors profit: for bees ſucceed very well here: the wax was for the moſt part ſold to tradeſmen: but the honey they made uſe of in their own families, in different ways. The people were unanimous, that the common bees were not in *North America* before the arrival of the *Europeans*; but that they were firſt brought over by the *Engliſh* who ſettled here. The *Indians* likewiſe generally declare, that their fathers had never ſeen any bees either in the woods or any where elſe, before the *Europeans* had been ſeveral years ſettled here. This is further confirmed by the name which the *Indians* give them: for having no particular name for them in their language, they call them *Engliſh flies*, becauſe the *Engliſh* firſt brought them over: but at preſent they fly plentifully about the woods of *North America*. However it has been obſerved that the bees always when they ſwarm, ſpread to the ſouthward, and never

never to the northward. It ſeems as if they do not find the latter countries ſo good for their conſtitution: therefore they cannot ſtay in *Canada*, and all that have been carried over thither, died in winter. It ſeemed to me as if the bees in *America* were ſomewhat ſmaller than ours in *Sweden*. They have not yet been found in the woods on the other ſide of the *Blue Mountains*, which confirms the opinion of their being brought to *America* of late. A man told Mr. *Bartram*, that on his travels in the woods of *North America*, he had found another ſort of bees, which, inſtead of ſeparating their wax and honey, mixed it both together in a great bag. But this account wants both clearing up and confirming.

November the 9th. ALL the old *Swedes* and *Engliſhmen* born in *America* whom I ever queſtioned, aſſerted that there were not near ſo many birds fit for eating at preſent, as there uſed to be when they were children, and that their decreaſe was viſible. They even ſaid, that they had heard their fathers complain of this, in whoſe childhood the bays, rivers and brooks were quite covered with all ſorts of water fowl, ſuch as wild geeſe, ducks, and the like. But at preſent there is ſometimes not a

ſingle bird upon them; about ſixty or ſeventy years ago, a ſingle perſon could kill eighty ducks in a morning; but at preſent you frequently wait in vain for a ſingle one. A *Swede* above ninety years old, aſſured me that he had in his youth killed twenty-three ducks at a ſhot. This good luck no body is likely to have at preſent, as you are forced to ramble about for a whole day, without getting a ſight of more than three or four. *Cranes* * at that time came hither by hundreds in the ſpring: at preſent there are but very few. The *wild Turkeys*, and the birds which the *Swedes* in this country call *Partridges* and *Hazelhens* were in whole flocks in the woods. But at this time a perſon is tired with walking before he can ſtart a ſingle bird.

THE cauſe of this diminution is not difficult to find. Before the arrival of the *Europeans*, the country was uncultivated, and full of great foreſts. The few Indians that lived here ſeldom diſturbed the birds. They carried on no trade among themſelves, iron and gun powder were unknown to them.

* WHEN Captain *Amadas*, the firſt *Engliſhman* that ever landed in *North America*, ſet foot on ſhore (to uſe his own words) *ſuch a flocke of Cranes (the moſt part white) aroſe under us with ſuch a cry, redoubled by many ecchoes, as if an armie of men had ſhowted alltogether.*

them. One hundredth part of the fowl which at that time were ſo plentiful here, would have ſufficed to feed the few inhabitants; and conſidering that they cultivated their ſmall maize fields, caught fiſh, hunted ſtags, beavers, bears, wild cattle, and other animals whoſe fleſh was delicious to them, it will ſoon appear how little they diſturbed the birds. But ſince the arrival of great crouds of *Europeans*, things are greatly changed: the country is well peopled, and the woods are cut down: the people increaſing in this country, they have by hunting and ſhooting in part extirpated the birds, in part ſcared them away: in ſpring the people ſtill take both eggs, mothers and young indifferently, becauſe no regulations are made to the contrary. And if any had been made, the ſpirit of freedom which prevails in the country would not ſuffer them to be obeyed. But though the eatable birds have been diminiſhed greatly, yet there are others, which have rather increaſed than decreaſed in number, ſince the arrival of the *Europeans:* this can moſt properly be ſaid of a ſpecies of daws which the *Engliſh* call *Blackbirds* * and the *Swedes Maize thieves*, Dr. *Linnæus* calls them *Gra-*

* PROPERLY *ſhining blackbirds.*

cula Quiſcula. And together with them, the ſeveral ſorts of *Squirrels* among the quadrupeds have ſpread: for theſe and the former, live chiefly upon maize, or at leaſt they are moſt greedy of it. But as population increaſes, the cultivation of maize increaſes, and of courſe the food of the abovementioned animals is more plentiful: to this it is to be added, that theſe latter are rarely eaten, and therefore they are more at liberty to multiply their kind. There are likewiſe other birds which are not eaten, of which at preſent there are nearly as many as there were before the arrival of the *Europeans.* On the other hand I heard great complaints of the great decreaſe of eatable fowl, not only in this province, but in all the parts of *North America,* where I have been.

AGED people had experienced that with the fiſh, which I have juſt mentioned of the birds: in their youth, the bays, rivers, and brooks, had ſuch quantities of fiſh that at one draught in the morning, they caught as many as a horſe was able to carry home. But at preſent things are greatly altered; and they often work in vain all the night long, with all their fiſhing tackle. The cauſes of this decreaſe of fiſh, are partly the ſame with thoſe of the diminution of the number of birds; being of late caught by

by a greater variety of contrivances, and in different manners than before. The numerous mills on the rivers and brooks likewiſe contribute to it in part: for it has been obſerved here, that the fiſh go up the river in order to ſpawn in a ſhallow water; but when they meet with works that prevent their proceeding, they turn back, and never come again. Of this I was aſſured by a man of fortune at *Boſton:* his father was uſed to catch a number of herrings throughout the winter and almoſt always in ſummer, in a river, upon his country ſeat: but he having built a mill with a dyke in this water, they were loſt. In this manner they complained here and every where of the decreaſe of fiſh. Old people aſſerted the ſame in regard to oyſters at *New York*; for though they are ſtill taken in conſiderable quantity, and are as big and as delicious as can be wiſhed, yet all the oyſter-catchers own, that the number diminiſhes greatly every year: the moſt natural cauſe of it, is probably the immoderate catching of them at all times of the year.

MR. FRANKLIN told me that in that part of *New England*, where his father lived, two rivers fell into the ſea, in one of which, they caught great numbers of herring, and in the other not one. Yet the places where

theſe rivers diſcharged themſelves into the ſea, were not far aſunder. They had obſerved that when the herrings came in ſpring to depoſit their ſpawn, they always ſwam up the river where they uſed to catch them, but never came into the other. This circumſtance led Mr. *Franklin*'s father who was ſettled between the two rivers, to try whether it was not poſſible to make the herrings likewiſe live in the other river. For that purpoſe he put out his nets, as they were coming up for ſpawning, and he caught ſome. He took the ſpawn out of them, and carefully carried it acroſs the land into the other river. It was hatched, and the conſequence was, that every year afterwards they caught more herrings in that river; and this is ſtill the caſe. This leads one to believe that the fiſh always like to ſpawn in the ſame place where they were hatched, and from whence they firſt put out to ſea; being as it were accuſtomed to it.

The following is another peculiar obſervation. It has never formerly been known that codfiſh were to be caught at cape *Hinlopen*: they were always caught at the mouth of the *Delaware*: but at preſent they are numerous in the former place. From hence it may be concluded that fiſh likewiſe change

change their place of abode, of their own accord.

A CAPTAIN of a ſhip who had been in *Greenland*, aſſerted from his own experience, that on paſſing the ſeventieth deg. of north lat. the ſummer heat was there much greater, than it is below that degree. From hence he concluded, that the ſummer heat at the pole itſelf, muſt be ſtill more exceſſive, ſince the ſun ſhines there for ſuch a long ſpace of time, without ever ſetting. The ſame account with ſimilar conſequences drawn from thence, Mr. *Franklin* had heard of the ſhip captains in *Boſton*, who had ſailed to the moſt northern parts of this hemiſphere. But ſtill more aſtoniſhing is the account he got from captain *Henry Atkins*, who ſtill lives at *Boſton*. He had for ſome time been upon the fiſhery along the coaſts of *New England*. But not catching as much as he wiſhed, he ſailed north, as far as *Greenland*. At laſt he went ſo far, that he diſcovered people, who had never ſeen *Europeans* before (and what is more aſtoniſhing) who had no idea of the uſe of fire, which they had never employed; and if they had known it, they could have made no uſe of their knowledge, as there were no trees in the country. But they eat the birds and fiſh which they caught quite

raw. Captain *Atkins* got ſome very ſcarce ſkins in exchange for ſome trifles.

It is already known from ſeveral accounts of voyages, that to the northward neither trees nor buſhes, nor any ligneous plants are to be met with, fit for burning. But is it not probable that the inhabitants of ſo deſolate a country, like other northern nations which we know, burn the train oil of fiſhes, and the fat of animals in lamps, in order to boil their meat, to warm their ſubterraneous caves in winter, and to light them in the darkeſt ſeaſon of the year? elſe their darkneſs would be inſupportable.

November the 11th. In ſeveral writings we read of a large animal, which is to be met with in *New England* and other parts of *North America*. They ſometimes dig very long and branched horns out of the ground in *Ireland*, and no body in that country or any where elſe in the world, knows an animal that has ſuch horns. This has induced many people to believe that it is the *Mooſe-deer* ſo famous in *North America*, and that the horns found, were of animals of this kind, which had formerly lived in that iſland, but were gradually deſtroyed. It has even been concluded, that *Ireland*, in diſtant ages either was connected with *North America*, or that a number

ber of little iſlands, which are loſt at preſent, made a chain between them. This led me to enquire, whether an animal with ſuch exceſſive great horns, as are aſcribed to the *Mooſe-deer*, had ever been ſeen in any part of this country. Mr. *Bartram* told me, that notwithſtanding he had carefully enquired to that purpoſe, yet there was no perſon who could give him any information, which could be relied upon, and therefore he was entirely of opinion, that there was no ſuch an animal in *North America*. Mr. *Franklin* related that he had, when a boy, ſeen two of the animals which they call *Mooſe-deer*, but he well remembred that they were not near of ſuch a ſize as they muſt have been, if the horns found in *Ireland* were to fit them: the two animals which he ſaw, were brought to *Boſton* in order to be ſent to *England* to Queen *Ann*. The height of the animal up to the back was that of a pretty tall horſe; but the head and its horns were ſtill higher: Mr. *Dudley* has given a deſcription of the *Mooſe-deer* which is found in *North America*. On my travels in *Canada*, I often enquired of the *Frenchmen*, whether there had ever been ſeen ſo large an animal in this country, as ſome people ſay there is in *North America*; and with ſuch great horns

horns as are ſometimes dug out in *Ireland*. But I was always told, that they had never heard of it, and much leſs ſeen it: ſome added, that if there was ſuch an animal, they certainly muſt have met with it, in ſome of their excurſions in the woods. There are elks here, which are either of the ſame ſort with the *Swediſh* ones, or a variety of them: of theſe they often catch ſome which are larger than common, whence perhaps the report of the very large animal with exceſſive horns in *North America* firſt had its riſe. Theſe elks are called *Original*'s by the *French* in *Canada*, which name they have borrowed from the *Indians*: perhaps *Dudley*, in deſcribing the *Mooſe-deer*, meant no other animals, than theſe large elks.*

Mr. *Franklin* gave me a piece of a ſtone, which on account of its indeſtructibility in the fire, is made uſe of in *New England* for making melting furnaces and forges.

It

* What gives ſtill more weight, to Mr. *Kalm*'s opinion of the *Elk* being the *Mooſe-deer*, is the name *Muſu* which the *Algonkins* give to the elk, as Mr. *Kalm* himſelf obſerves in the ſequel of his work; and this circumſtance is the more remarkable, as the *Algonkins* before the *Irokeeſe* or *five nations* got ſo great a power in *America*, were the moſt powerful nation in the northern part of this continent; in ſo much, that though they be now reduced to an inconſiderable number, their language is however a kind of univerſal language in *North America*; ſo that there is no doubt, that the elk is the famous *Mooſe-deer*. F.

It conſiſts of a mixture of *Lapis Ollaris* or Serpentine ſtone, and of *Aſbeſt*. The greateſt part of it is a grey Serpentine ſtone, which is fat and ſmooth to the touch, and is eaſily cut and worked. Here and there are ſome glittering ſpeckles of that ſort of aſbeſt, whoſe fibres come from a center like rays, or *Star Aſbeſt*. This ſtone is not found in ſtrata or ſolid rocks, but here and there ſcattered on the fields.

Another ſtone is called *Soapſtone* by many of the *Swedes*, being as ſmooth as ſoap on the outſide. They make uſe of it for rubbing ſpots out of their cloaths. It might be called *Saxum talcoſum particulus ſpataceis, granatiſque immixtis*, or a talc with mixed particles of ſpar and garnets. A more exact deſcription I reſerve for another work. At preſent I only add that the ground colour is pale green, with ſome dark ſpots, and ſometimes a few of a greeniſh hue. It is very ſmooth to the touch, and runs always waved. It is likewiſe eaſily ſawed and cut, though it is not very ſmooth. I have ſeen large ſtones of it, which were a fathom and more long, proportionably broad, and commonly ſix inches or a foot deep. But I cannot determine any thing of their original ſize, as I have not been at the place where they are dug, and have only

only ſeen the ſtones at *Philadelphia*, which are brought there ready cut. The particles of talc in this ſtone are about thirty times as many as thoſe of ſpar and garnet. It is found in many parts of the country, for example in the neighbourhood of *Cheſter* in *Penſylvania*. The *Engliſh* likewiſe call it *Soapſtone*,* and it is likely that the *Swedes* have borrowed that name from them.

This ſtone was chiefly employed in the following manner. Firſt, the people took ſpots out of their cloaths with it. But for this purpoſe the whole ſtone is not equally uſeful, for it includes in its clear particles ſome dark ones which conſiſt wholly of ſerpentine ſtone, and may eaſily be cut with a knife; ſome of the looſe ſtone is ſcraped off like a powder, and ſtrewed upon a greaſy ſpot, in ſilk or any other ſtuff; this imbibes the greaſe, and after rubbing off the powder the ſpot diſappears: and as this ſtone is likewiſe very durable in the fire, the country people make their hearths with it, eſpecially the place where the fire lies, and where the heat is the greateſt, for the ſtone ſtands

* It ſeems to be either the ſubſtance commonly called *French Chalk*, or perhaps the *Soap-rock*, which is common in *Cornwall* near the *Lizard point*, and which conſiſts beſides of ſome particles of talc, chiefly of an earth like magneſia, which latter with acid of vitriol, yields an earthy vitriolic ſalt, or *Epſom ſalt*. F.

ſtands the ſtrongeſt fire. If the people can get a ſufficient quantity of this ſtone, they lay the ſteps before the houſes with it, inſtead of bricks, which are generally uſed for that purpoſe.

THE walls round the court yards, gardens, burying places, and thoſe for the ſloping cellar doors towards the ſtreet, which are all commonly built of brick, are covered with a coping of this ſtone; for it holds excellently againſt all the effects of the ſun, air, rain and ſtorm, and does not decay but ſecures the bricks. On account of this quality, people commonly get the door poſts in which their hinges are faſtened made of this ſtone: and in ſeveral publick buildings, ſuch as the houſe of aſſembly for the province, the whole lower wall is built of it, and in other houſes the corners are laid out with it.

THE *Salt* which is uſed in the Engliſh *North American* colonies is brought from the *Weſt Indies*. The *Indians* have in ſome places ſalt ſprings from which they get ſalt by boiling. I ſhall in the ſequel have occaſion to deſcribe ſome of them. Mr. *Franklin* was of opinion that the people in *Penſylvania* could eaſier make good ſalt of ſea water, than in *New England*, where ſometimes ſalt is made of the ſea water on their

their coaſt; though their ſituation is more northerly. *Lead-ore* has been diſcovered in *Penſylvania*, but as it is not to be met with in quantity, no body ever attempted to uſe it. *Loadſtones* of conſiderable goodneſs have likewiſe been found; and I myſelf poſſeſs ſeveral pretty pieces of them.

IRON is dug in ſuch great quantities in *Penſylvania* and in the other *American* provinces of the *Engliſh*, that they could provide with that commodity not only *England*, but almoſt all *Europe*, and perhaps the greater part of the globe. The ore is here commonly infinitely eaſier got in the mines, than our *Swediſh* ore. For in many places with a pick ax, a crow-foot and a wooden club, it is got with the ſame eaſe with which a hole can be made in a hard ſoil: in many places the people know nothing of boring, blaſting and firing; and the ore is likewiſe very fuſible. Of this iron they get ſuch quantities, that not only the numerous inhabitants of the colonies themſelves have enough of it, but great quantities, are ſent to the *Weſt Indies*, and they have lately began even to trade to *Europe* with it. This iron is reckoned better for ſhip building than our *Swediſh* iron, or any other, becauſe ſalt water does not corrode it ſo much. Some people believed that without reckoning

ing the freight, they could ſell their iron in *England* at a lower rate than any other nation; eſpecially when the country becomes better peopled and labour cheaper.

THE *mountain flax*,* or that kind of ſtone, which Biſhop *Browallius* calls *Amiantus fibris ſeparabilibus molliuſculis*, in his lectures on mineralogy, which were publiſhed in 1739, or the amiant with ſoft fibres which can eaſily be ſeparated, is found abundantly in *Penſylvania*. Some pieces are very ſoft, others pretty tough: Mr. *Franklin* told me that twenty and ſome odd years ago, when he made a voyage to *England*, he had a little purſe with him, made of the mountain flax of this country, which he preſented to Sir *Hans Sloane*. I have likewiſe ſeen paper made of this ſtone: and I have likewiſe received ſome ſmall pieces of it, which I keep in my cabinet. Mr. *Franklin* had been told by others that on expoſing this mountain flax to the open air in winter, and leaving it in the cold and wet, it would grow together, and more fit for ſpinning. But he did not venture to deter-

* *Amiantus (Aſbeſtus)* fibroſus, fibris ſeparabilibus flexilibus tenacibus, *Linn. Syſt. nat.* p. 55.

Amiantus fibris mollibus parallelis facile ſeparabilibus, *Wall.* Min. 140.

Mountain Flax, *Linum montanum*, *Forſter*'s Mineralogy, p. 17. F.

determine how far this opinion was grounded. On this occaſion he related a very pleaſant accident, which happened to him with this mountain flax: he had, ſeveral years ago, got a piece of it, which he gave to one of his journeymen printers, in order to get it made into a ſheet at the paper mill. As ſoon as the fellow brought the paper, Mr. *Franklin* rolled it up, and threw it into the fire, telling the journeyman he would ſee a miracle, a ſheet of paper which did not burn: the ignorant fellow aſſerted the contrary, but was greatly aſtoniſhed, upon ſeeing himſelf convinced. Mr. *Franklin* then explained him, though not very clearly, the peculiar qualities of the paper. As ſoon as he was gone, ſome of his acquaintance came in, who immediately knew the paper. The journeyman thought he would ſhew them a great curioſity and aſtoniſh them. He accordingly told them that he had curiouſly made a ſheet of paper, which would not burn, though it was thrown into the fire. They pretended to think it impoſſible, and he as ſtrenuouſly maintained his aſſertion. At laſt they laid a wager about it; but whilſt he was buſy with ſtirring up the fire, the others ſlyly beſmeared the paper with fat: the journeyman, who was not aware of it, threw it into the fire, and

and that moment it was all in flames: this aſtoniſhed him ſo much, that he was almoſt ſpeechleſs; upon which they could not help laughing, and ſo diſcovered the whole artifice.

In ſeveral houſes of the town, a number of little *Ants* run about, living under ground and in holes in the wall. The length of their bodies is one geometrical line. Their colour is either black or dark red: they have the cuſtom of carrying off ſweet things, if they can come at them, in common with the ants of other countries. Mr. *Franklin* was much inclined to believe that theſe little inſects could by ſome means communicate their thoughts or deſires to each other, and he confirmed his opinion by ſome examples. When an ant finds ſome ſugar, it runs immediately under ground to its hole, where having ſtayed a little while, a whole army comes out, unites and marches to the place where the ſugar is, and carries it off by pieces: or if an ant meets with a dead fly, which it cannot carry alone, it immediately haſtens home, and ſoon after ſome more come out, creep to the fly and carry it away. Some time ago Mr. *Franklin* put a little earthen pot with treacle into a cloſet. A number of ants got into the pot, and devoured the treacle very

quitely. But as he obſerved it he ſhook them out, and tied the pot with a thin ſtring to a nail which he had faſtened in the ceiling; ſo that the pot hung down by the ſtring. A ſingle ant by chance remained in the pot: this ant eat till it was ſatisfied; but when it wanted to get off, it was under great concern to find its way out: it ran about the bottom of the pot, but in vain: at laſt it found after many attempts the way to get to the ceiling by the ſtring. After it was come there, it ran to the wall, and from thence to the ground. It had hardly been away for half an hour, when a great ſwarm of ants came out, got up to the ceiling, and crept along the ſtring into the pot, and began to eat again: this they continued till the treacle was all eaten: in the mean time one ſwarm running down the ſtring, and the other up.

November the 12th. A MAN of fortune who has long been in this province aſſerted, that, by twenty years experience, he had found a confirmation of what other people have obſerved with regard to the weather, *viz.* that the weather in winter was commonly foretold by that on the firſt of *November*, old ſtile, or twelfth new ſtile; if that whole day be fair, the next winter will bring but little rain and ſnow along with

with it: but if the firſt half of the day be clear, and the other cloudy, the beginning of winter would accordingly be fair, but its end and ſpring would turn out rigorous and diſagreeable: of the ſame kind were the other preſages. I have likewiſe in other places heard of ſimilar ſigns of the weather; but as a mature judgment greatly leſſens the confidence in them, ſo the meteorological obſervations have ſufficiently ſhewn, how infinitely often theſe prophecies have failed.

PENSYLVANIA abounds in ſprings, and you commonly meet with a ſpring of clear water on one or the other, and ſometimes on ſeveral ſides of a mountain. The people near ſuch ſprings, uſe them for every purpoſe of a fine ſpring water. They alſo conduct the water into a little ſtone building near the houſe, where they can confine it, and bring freſh ſupplies at pleaſure. In ſummer they place their milk, bottles of wine and other liquors in this building, where they keep cool and freſh. In many country houſes, the kitchen or buttery was ſo ſituated, that a rivulet ran under it, and had the water near at hand.

NOT only people of fortune, but even others that had ſome poſſeſſions, commonly had fiſh ponds in the country near their houſes. They always took care that freſh

water might run into their ponds, which is very ſalutary for the fiſh: for that purpoſe the ponds were placed near a ſpring on a hill.

November the 13th. I SAW in ſeveral parts of this province a ready method of getting plenty of graſs to grow in the meadows. Here muſt be remembered what I have before mentioned about the ſprings, which are ſometimes found on the ſides of hills and ſometimes in vallies. The meadows lie commonly in the vallies between the hills: if they are too ſwampy and wet, the water is carried off by ſeveral ditches. But the ſummer in *Penſylvania* is very hot; and the ſun often burns the graſs ſo much, that it dries up entirely. The huſbandmen therefore have been very attentive to prevent this in their meadows: to that purpoſe they look for all the ſprings in the neighbourhood of a meadow; and as the rivulets flowed before by the ſhorteſt way into the vallies, they raiſe the water as much as poſſible and neceſſary, to the higher part of the meadow, and make ſeveral narrow channels from the brook, down into the plain, ſo that it is entirely watered by it. When there are ſome deeper places, they frequently lay wooden gutters acroſs them, through which the water flows

flows to the other ſide; and from thence it is again by very narrow channels carried to all the places where it ſeems neceſſary. To raiſe the water the higher, and in order to ſpread it more, there are high dykes built near the ſprings, between which the water riſes till it is ſo high as to run down where the people want it. Induſtry and ingenuity went further: when a brook runs in a wood, with a direction not towards the meadow, and it has been found by levelling, and taking an exact ſurvey of the land between the meadow and the rivulet, that the latter can be conducted towards the former; a dyke is made, which hems the courſe of the brook, and the water is led round the meadow over many hills, ſometimes for the ſpace of an *Engliſh* mile and further, partly acroſs vallies in wooden pipes, till at laſt it is brought where it is wanted, and where it can be ſpread as above-mentioned. One that has not ſeen it himſelf, cannot believe how great a quantity of graſs there is in ſuch meadows, eſpecially near the little channels; whilſt others, which have not been thus managed look wretchedly. The meadows commonly lie in the vallies, and one or more of their ſides have a declivity. The water can therefore eaſily be brought to

run down in them. Theſe meadows which are ſo carefully watered, are commonly mowed three times every ſummer. But it is likewiſe to be obſerved, that ſummer continues ſeven months here. The inhabitants ſeldom fail to employ a brook or ſpring in this manner, if it is not too far from the meadows to be led to them.

The leaves were at preſent fallen from all the trees; both from oaks, and from all thoſe which have deciduous leaves, and they covered the ground in the woods ſix inches deep. The great quantity of leaves which drop annually, would neceſſarily ſeem to encreaſe the upper black mould greatly. However, it is not above three or four inches thick in the woods, and under it lays a brick coloured clay, mixed with a ſand of the ſame colour. It is remarkable, that a ſoil which in all probability has not been ſtirred, ſhould be covered with ſo little black mould: but I ſhall ſpeak of this in the ſequel.

November the 14th. The *Squirrels* which run about plentifully in the woods are of different ſpecies; I here intend to deſcribe the moſt common ſorts, more accurately.

The *grey Squirrels* are very plentiful in *Penſylvania* and in the other provinces of *North America*. Their ſhape correſponds with

with that of our *Swediſh* ſquirrel; but they differ from them, by keeping their grey colour all the year long, and in ſize being ſomething bigger. The woods in all theſe provinces, and chiefly in *Penſylvania*, conſiſt of trees with deciduous leaves, and in ſuch theſe ſquirrels like to live. *Ray* in his *Synopſis Quadrupedum*, p. 215, and *Cateſby* in his *Natural Hiſtory of Carolina*, Vol. 2. p. 74, tab. 74, call it the *Virginian greater grey Squirrel*; and the latter has added a figure after life. The *Swedes* call it *grao Ickorn*, which is the ſame as the Engliſh *grey Squirrel*. Their neſts are commonly in hollow trees, and are made of moſs, ſtraw, and other ſoft things: their food is chiefly nuts; as hazel nuts, chinquapins, cheſnuts, walnuts, hiccory nuts, and the acorns of the different ſorts of oak which grow here; but maize is what they are moſt greedy of. The ground in the woods is in autumn covered with acorns, and all kinds of nuts which drop from the numerous trees: of theſe the ſquirrels gather great ſtores for winter, which they lay up in holes dug by them for that purpoſe: they likewiſe carry a great quantity of them into their neſts.

As ſoon as winter comes, the ſnow and cold confines them to their holes

for ſeveral days, eſpecially when the weather is very rough. During this time they conſume the little ſtore, which they have brought to their neſts: as ſoon therefore as the weather grows milder, they creep out, and dig out part of the ſtore which they have laid up in the ground: of this they eat ſome on the ſpot, and carry the reſt into their neſts on the trees. We frequently obſerved that in winter, at the eve of a great froſt, when there had been ſome temperate weather, the ſquirrels, a day or two before the froſt, ran about the woods in greater numbers than common, partly in order to eat their fill, and partly to ſtore their neſts with a new proviſion for the enſuing great cold, during which they did not venture to come out, but lay ſnug in their neſts: therefore ſeeing them run in the woods in greater numbers than ordinary, was a ſafe prognoſtic of an enſuing cold.

The *hogs* which are here droven into the woods, whilſt there is yet no ſnow in them, often do conſiderable damage to the poor ſquirrels, by rooting up their ſtore-holes, and robbing their winter proviſions. Both the Indians, and the *European* Americans, take great pains to find out theſe ſtore-holes, whether in trees or in the ground, as all the nuts they contain are choice, and not

not only quite ripe, but likewiſe not pierced by worms. The nuts and acorns which the *Dormice*, or *Mus Cricetus*, *Linn.* ſtore up in autumn, are all in the ſame condition. The *Swedes* relate, that in the long winter, which happened here in the year 1741, there fell ſuch a quantity of ſnow, that the ſquirrels could not get to their ſtore, and many of them were ſtarved to death.

The damage which theſe animals do in the maize fields, I have already deſcribed: they do the more harm, as they do not eat all the corn, but only the inner and ſweet part, and as it were take off the huſks. In ſpring towards the end of *April*, when the oaks were in full flower, I once obſerved a number of ſquirrels on them, ſometimes five, ſix, or more in a tree, who bit off the flower ſtalks a little below the flowers, and dropt them on the ground: whether they eat any thing off them, or made uſe of them for ſome other purpoſe I know not: but the ground was quite covered with oak flowers, to which part of the ſtalk adhered. For this reaſon the oaks do not bear ſo much fruit by far, to feed hogs and other animals, as they would otherwiſe do.

Of all the wild animals in this country, the ſquirrels are ſome of the eaſieſt to tame, eſpecially

eſpecially when they are taken young for that purpoſe. I have ſeen them tamed ſo far, that they would follow the boys into the woods and run about every where, and when tired would ſit on their ſhoulders. Sometimes they only ran a little way into the wood, and then returned home again to the little hole that had been fitted up for them. When they eat, they ſit almoſt upright, hold their food between their forefeet and their tail bent upwards. When the tame ones got more than they could eat at a time, they carried the remainder to their habitations, and hid it amongſt the wool which they lay upon. Such tame ſquirrels ſhewed no fear of ſtrangers, and would ſuffer themſelves to be touched by every body, without offering to bite. They ſometimes would leap upon ſtranger's cloaths and lie ſtill on them, in order to ſleep. In the farm houſes where they were kept, they played with cats and dogs: they likewiſe eat bread.

The wild grey ſquirrels likewiſe hold up their tails when ſitting. As ſoon as they perceive a man, they continually wag their tails and begin to gnaſh with their teeth, and make a great noiſe, which they do not readily give over. Thoſe who go a ſhooting birds and other animals, are therefore very angry

angry at them, as this noiſe diſcovers them, and alarms the game. Though a grey ſquirrel does not ſeem to be very ſhy, yet it is very difficult to kill; for when it perceives a man, it climbs upon a tree, and commonly chuſes the higheſt about it. It then tries to hide itſelf behind the trunk, ſo that the ſhooter may not ſee it, and though he goes ever ſo faſt round the tree, yet the ſquirrel changes its place as quickly, if not quicker: if two boughs bend towards each other, the ſquirrel lies in the middle of them, and preſſes itſelf ſo cloſe, that it is hardly viſible. You may then ſhake the tree, throw ſticks and ſtones to the place where it lies, or ſhoot at it, yet it will never ſtir. If three branches join, it takes refuge between them, and lies as cloſe to them as poſſible, and then it is ſufficiently ſafe. Sometimes it eſcapes on a tree where there are old neſts of ſquirrels, or of large birds: it ſlips into ſuch, and cannot be got out, either by ſhooting, throwing, or any thing elſe; for the grey ſquirrels ſeldom leap from one tree to another, except extreme danger compels them. They commonly run directly up the trees and down the ſame way, with their head ſtraight forward. Several of them which

I ſhot

I ſhot in the woods, had great numbers of fleas.

I HAVE already mentioned that theſe ſquirrels are among the animals, which at preſent are more plentiful than they formerly were, and that the infinitely greater cultivation of maize, which is their favourite food, is the cauſe of their multiplication. However it is peculiar, that in ſome years a greater number of ſquirrels come down from the higher countries into *Penſylvania*, and other *Engliſh* colonies. They commonly come in autumn, and are then very buſy in the woods gathering nuts and acorns, which they carry into hollow trees or their ſtore-holes, in order to be ſufficiently provided with food for winter. They are ſo diligent in ſtoring up of proviſions, that though the nuts have been extremely plentiful that year, yet it is difficult to get a conſiderable quantity of them. The people here pretended from their own experience to know, that when the ſquirrels came down in ſuch numbers from the higher parts of the country, the winter enſuing was uncommonly rigorous and cold, and for that reaſon they always look upon their coming down, as a ſure ſign of ſuch a winter. Yet this does not always prove true, as I experienced in the autumn of the year 1749: at that time

time a great number of ſquirrels came down into the colonies, yet the winter was very mild and no colder than common. But it appeared that their migration was occaſioned by the ſcarcity of nuts and acorns, which happened that year in the higher parts of the country, and obliged them to come hither for their food. Therefore they generally return the next year to the place from which they came.

SOME people reckon ſquirrel fleſh a great dainty, but the generality make no account of it. The ſkin is good for little, yet ſmall ſtraps are ſometimes made of it, as it is very tough: others uſe it as a furr lining, for want of a better. Ladies ſhoes are likewiſe ſometimes made of it.

THE *Rattle ſnake* often devours the ſquirrels, notwithſtanding all their agility. This unwieldy creature, is ſaid to catch ſo agile an one, merely by faſcination. I have never had an opportunity of ſeeing how it is done: but ſo many credible people aſſured me of the truth of the fact, and aſſerted that they were preſent, and paid peculiar attention to it, that I am almoſt forced to believe their unanimous accounts. The faſcination is effected in the following manner: the ſnake lies at the bottom of the tree upon which the ſquirrel ſits; its eyes

eyes are fixed upon the little animal, and from that moment it cannot eſcape; it begins a doleful outcry, which is ſo well known, that a perſon paſſing by, on hearing it, immediately knows that it is charmed by a ſnake. The ſquirrel runs up the tree a little way, comes downwards again, then goes up, and now comes lower again. On that occaſion it has been obſerved, that the ſquirrel always goes down more than it goes up. The ſnake ſtill continues at the root of the tree, with its eyes fixed on the ſquirrel, with which its attention is ſo entirely taken up, that a perſon accidentally approaching, may make a conſiderable noiſe, without the ſnake's ſo much as turning about. The ſquirrel as before-mentioned comes always lower, and at laſt leaps down to the ſnake, whoſe mouth is already wide open for its reception. The poor little animal then with a piteous cry runs into the ſnake's jaws, and is ſwallowed at once, if it be not too big; but if its ſize will not allow it to be ſwallowed at once, the ſnake licks it ſeveral times with its tongue, and ſmoothens it, and by that means makes it fit for ſwallowing. Every thing elſe remarkable at this enchantment, I have deſcribed in a treatiſe inſerted in the *Memoirs of the Royal Swediſh Academy of Sciences*,

Sciences, in the Volume for the year 1753, I therefore am not ſo circumſtantial here. The ſame power of enchanting is aſcribed to that kind of ſnake, which is commonly called the *black ſnake* in *America*, and it is ſaid to catch and devour ſquirrels in the ſame manner as the former.*

But theſe little animals do conſiderable damage to the maize, not only whilſt it is upon the ſtalk, as I have before obſerved, but even when it is brought home into the barns: for if they can come at it without any obſtacle, they can in a few nights bring a whole buſhel away into their lurking holes. The government in moſt of the *North American* colonies, has therefore been obliged to offer a certain premium, to be paid out of the common treaſury, for the head of a ſquirrel. It ſeems inconceivable what a ſum of money has been paid for grey and black ſquirrel's heads, in the province

* It has been obſerved, that only ſuch ſquirrels and birds as have their neſts near the place where ſuch ſnakes come to, make this pitiful noiſe, and are ſo buſy in running up and down the tree and the neighbouring branches, in order to draw off the attention of the ſnake from their brood, and often they come ſo very near in order to fly away again, that being within reach of the ſnakes, they are at laſt bit, poiſoned and devoured; and this will, I believe, perfectly account for the powers of faſcinating birds and ſmall creatures in the ſnakes. F.

vince of *Penſylvania* only, from the firſt of *January* 1749, to the firſt of *January* 1750; for when the deputies from the ſeveral diſtricts of the province met, in order to deliberate upon the affairs of the province, each of them complained that their treaſuries were exhauſted by paying ſo much for ſquirrels: for at that time the law had appointed a reward of three-pence for each ſquirrel's head. So far extended the vengeance taken upon theſe little creatures, i. e. upon the grey and black ſquirrels. It was found, by caſting up accounts, that in that one year eight thouſand pounds of *Penſylvania* currency, had been expended in paying theſe rewards: this I was aſſured of by a man who had looked over the accounts himſelf.

MANY people, eſpecially young men, left all other employment, and went into the woods to ſhoot ſquirrels: but the government having experienced how much three-pence per head took out of the treaſury, ſettled half that ſum upon each ſquirrel's head.

FLYING SQUIRRELS are a peculiar kind, which ſeem to be the ſame with thoſe which inhabit *Finland*, and which Dr. *Linnæus* in his *Fauna Svecica*, No. 38. calls *Sciurus volans*. The *American* flying ſquirrel at the utmoſt

utmoſt is only a variety of that which we have in *Finland*. *Cateſby* in his *Natural Hiſtory of Carolina*, Vol. 2, p. 76, 77, has deſcribed it, and tab. 76, 77, drawn it after life. He likewiſe calls it *Sciurus volans*. *Edwards* in his *Natural Hiſtory of Birds* repreſents it, t. 191. They are met with in the woods, but not very frequently. They are ſcarce ever ſeen in the day time, unleſs they are forced out by men who have diſcovered their neſts: for they ſleep in the day time, but as ſoon as it grows dark, they come out and run about almoſt all night. They live in hollow trees, and by cutting one down, ſeven or more flying ſquirrels are frequently found in it. By the additional ſkin with which Providence has provided them on both ſides, they can fly from one tree to another. They expand their ſkins like wings, and contract them again as ſoon as they can get hold of the oppoſite tree. Some people ſay that they fly in a horizontal line; but others aſſerted that they firſt went a little downwards, and then roſe up again, when they approached the tree to which they would fly: they cannot fly further than four or five fathoms. Among all the ſquirrels in this country, theſe are the moſt eaſily tamed. The boys carry them to ſchool,

or wherever they go, without their ever attempting to escape: if even they put their squirrel aside, it leaps upon them again immediately, creeps either into their bosom, or their sleeve, or any fold of the clothes, and lies down to sleep: its food is the same with that of the grey squirrel.

THERE is a small species of squirrels abounding in the woods, which the *English* call *ground Squirrels*. *Catesby* has described and drawn them from life, in the 2d. Vol. of his *Natural History of Carolina*, p. 75, tab. 75, and *Edwards* in his *Natural History of Birds*, t. 181.* He and Dr. *Linnæus* call it *Sciurus striatus*, or the *streaked Squirrel*. These do not properly live in trees, as others of this genus, but dig holes in the ground (much in the same manner as rabbets) in which they live, and whither they take refuge when they perceive any danger. Their holes go deep, and commonly further inwards divide into many branches. They are also cunning enough to

* As *Catesby* and *Edwards* have both represented the *flying Squirrel* in a sitting attitude, I have given here, plate I a figure of one with the expanded membrane, and joined to it on the same plate, a more accurate figure of the *ground Squirrel*.

IT is not yet made out with certainty, whether the *American* flying squirrel, and that found in *Finland* and in the north of *Europe* and *Asia*, be the same animal. The *American* kind has a flat pennated tail, but the *European* kind a round one, which affords a very distinguishing character. F.

Flying Squirrel.
Ground Squirrel

to make ſometimes an opening or hole to the ſurface of the ground from one of theſe branches. The advantage they have from hence, is that when they ſtroll about for food, and the hole is ſtopt up through which they went out, they may not expoſe themſelves to be caught, but preſently find the other hole, into which they may retreat: but in autumn, when the leaves fall from the trees, or ſometime after, it is diverſion to ſee the conſternation they are ſometimes in when purſued; for their holes being eaſily covered with the great fall of leaves, or by the wind, they have a great deal to do, to find them on a ſudden: they then run backwards and forwards, as if they had loſt their way: they ſeem to know the places where they have made their ſubterraneous walks, but cannot conceive where the entrances are. If they be then purſued, and one claps his hands, they know no other refuge than that of climbing upon a tree; for it is to be obſerved that theſe ſquirrels always live under ground, and never climb upon trees unleſs purſued, and unable in the hurry to find their holes. This kind of ſquirrels is much more numerous in *Penſylvania*, than in any other province of *North America* through which I have travelled. Its length is commonly ſix

inches, without the curved tail; and it is very narrow. The ſkin is ferruginous, or of a reddiſh brown, and marked with five black ſtreaks, one of which runs along the back, and two on each ſide. Their food conſiſts of all ſorts of corn, as rye, barley, wheat, maize, and of acorns, nuts, &c. They gather their winter proviſions in autumn, like the common grey ſquirrels, and keep them in their holes under ground. If they get into a granary, they do as much miſchief as mice and rats. It has often been obſerved that if, after eating rye, they come to ſome wheat, they throw up the former, which they do not like ſo well as the wheat, in order to fill their belly with the latter. When the maize is reaped in the fields, they are very buſy in biting off the ears, and filling the pouches in their mouth with corn, ſo that their cheeks are quite blown up. With this booty they haſten into the holes which they have made in the ground.

As a *Swede* was making a mill-dyke, pretty late in autumn, he employed for that purpoſe the ſoil of a neighbouring hill, and met with a hole on a ſubterraneous walk belonging to theſe ſquirrels: he followed it for ſome time, and diſcovered a walk on one ſide like a branch, parting from the chief ſtem: it was near two feet long,

long, and at its end was a quantity of choice acorns of the white oak, which the little careful animal had ſtored up for winter. Soon after he found another walk on the ſide like the former, but containing a fine ſtore of maize: the next had hiccory nuts, and the laſt and moſt hidden one contained ſome excellent cheſnuts, which might have filled two hats.

In winter theſe ſquirrels are ſeldom ſeen, for during that ſeaſon they live in their ſubterraneous holes upon the proviſions, which they have ſtored up there. However on a very fine and clear day they ſometimes come out. They frequently dig through the ground, into cellars in which the country people lay up their apples, which they partly eat, and partly ſpoil, ſo that the maſter has little or nothing left. They handle the maize ſtores full as roughly as the apples. But the cats are their great enemies, who devour them and bring them home to their young ones: their fleſh is not eaten by men, and their ſkin is not made uſe of.

Of all the ſquirrels in the country, theſe are the moſt difficult to be tamed; for, though they be caught very young, yet it is dangerous to touch them with naked hands, as they bite very ſharp when one is

not aware of them. Many boys, who had loſt a deal of time in trying to tame theſe ſquirrels, owned that they knew of no art to make them quite tame; at leaſt they are never ſo far tamed as the other ſpecies. In order to do any thing towards taming them they muſt be caught when they are very ſmall. Some people kept them in that ſtate in a cage, becauſe they looked very pretty.

I SHALL take an other opportunity of ſpeaking of the black and ferruginous ſquirrels, which likewiſe inhabit this country.

November the 15th. IN the morning I returned to *Philadelphia*. Mr. *Cock* told me to day, and on ſome other occaſions afterwards, an accident which happed to him, and which ſeemed greatly to confirm a peculiar ſign of an imminent hurricane. He ſailed to the *Weſt Indies* in a ſmall yacht, and had an old man on board, who had for a conſiderable time ſailed in this ſea. The old man ſounding the depth, called to the mate to tell Mr. *Cock* to launch the boats immediately, and to put a ſufficient number of men into them, in order to tow the yacht during the calm, that they might reach the iſland before them, as ſoon as poſſible, as within twenty-four hours there would be a ſtrong hurricane. Mr. *Cock* aſked him what reaſons he had to think ſo, the

the old man replied, that on ſounding, he ſaw the lead in the water at a diſtance of many fathoms more than he had ſeen it before; that therefore the water was become clear all of a ſudden, which he looked upon as a certain ſign of an impending hurricane in the ſea. Mr. *Cock* likewiſe ſaw the exceſſive clearneſs of the water. He therefore gave immediate orders for launching the boat, and towing the yacht, ſo that they arrived before night in a ſafe harbour. But before they had quite reached it the waves began to riſe more and more, and the water was as it were boiling, though no wind was perceptible. In the enſuing night the hurricane came on, and raged with ſuch violence, that not only many ſhips were loſt, and the roofs were torn off from the houſes, but even Mr. *Cock*'s yacht and other ſhips, though they were in ſafe harbours, were by the wind, and the violence of the ſea, waſhed ſo far on ſhore, that ſeveral weeks elapſed, before they could be got off.

An old *Dutch* ſkipper ſaid, that he had once caught a dogfiſh in the bay of *New York*, which being cut open, had a quantity of eels in his ſtomach.

November the 18th. Mr. *Bartram* ſhewed me an earthen pot, which had been found

in a place, where the *Indians* formerly lived. He, who firſt dug it out, kept greaſe and fat in it to ſmear his ſhoes, boots and all ſorts of leather with: Mr. *Bartram* bought the pot of that man; it was yet entire and not damaged: I could perceive no glaze or colour upon it, but on the outſide it was very much ornamented and upon the whole well made. Mr. *Bartram* ſhewed me ſeveral pieces of broken earthen veſſels which the *Indians* formerly made uſe of. It plainly appeared in all theſe that they were not made of mere clay; but that different materials had been mixed with it, according to the nature of the places where they were made. Thoſe *Indians*, for example, who lived near the ſea ſhore, pounded the ſhells of ſnails and muſcles, and mixed them with the clay. Others who lived further up in the country, where mountain cryſtals could be found, pounded them and mixed them with their clay; but how they proceeded in making the veſſels, is entirely unknown: it was plain, that they did not burn them much, for they were ſo ſoft that they might be cut in pieces with a knife: the workmanſhip however ſeems to have been very good; for at preſent they find whole veſſels or pieces in the ground, which are not damaged at all, though they have

have lain in the ground above a century. Before the *Europeans* ſettled in *North America*, the *Indians* had no other veſſels to boil their meat in, than theſe earthen pots of their own making: but ſince their arrival, they have always bought pots, kettles, and other neceſſary veſſels of the *Europeans*, and take no longer the pains of making ſome, by which means this art is entirely loſt among them. Such veſſels of their own conſtruction are therefore a great rarity even among the *Indians*. I have ſeen ſuch old pots and pieces of them, conſiſting of a kind of *Serpentine ſtone*, or *Linnæus*'s *Talcum*, Syſt. nat. 3. p. 52.

Mr. *Bartram* likewiſe ſhewed me little pieces of a *black ſlate*, which is plentifully found in ſome parts of the river *Skullkill*. There are pieces to be found, which are four feet and above ſquare: the colour and configuration is the ſame as in the *Table ſlate (Schiſtus tabularis, Linn.)* Syſt. nat. 3. p. 37. except that this is a little thicker. The inhabitants of the country thereabouts (in the neighbourhood of the *Skullkill*) cover their roofs with it; Mr. *Bartram* aſſured me, that he had ſeen a whole roof compoſed of four ſuch ſlates. The rays of the ſun, heat, cold, and rain do not act upon the ſtone.

Mr.

Mr. *Bartram* further related, that in ſeveral parts of the country, caves or holes were to be met with, going deep into the mountains: he had been in ſeveral of them and had often found a number of *Stalactites*, *Linnæus*'s *Stalactites ſtillatitius*, Syſt. nat. 3. p. 183. of different dimenſions at the top; they differed in colour, but the greateſt curioſity was, that in ſome of the caves Mr. *Bartram* had found *Stalactites*, whoſe outward ſide was as it were wreathed from top to bottom; he had ſent ſome pieces of it to *London*, and had none at preſent.

November the 20th. This morning I ſet out in company of a friend, on a journey to *Racoon* in *New Jerſey*, where many *Swedes* live, who have their own church. We had three miles to go before we came to the ferry which was to bring us over the *Delaware*. The country here was very low in ſome places: the plains on the banks of the river, were overflowed at every high water or flowing of the tide, and at the ebbing they were left dry again. However the inhabitants of the country hereabouts, made uſe of this plain: for that purpoſe they had in ſeveral places thrown up walls or dykes of earth towards the river, to prevent its overflowing the plains, which they made

made uſe of as meadows. On them the *Water-beeches (Platanus occidentalis, Linn.)* were planted in great numbers on both ſides the road, quite cloſe together: theſe in ſummer afford a pleaſant ſhade, on account of the abundance and ſize of their leaves, and make the road extremely delightful, as it reſembles a fine ſhady walk. The *Delaware* has nearly the ſame breadth here, which it has near *Philadelphia*. Near the place where the ferry is to be met with, ſeveral pretty houſes were built on both ſides, where travellers might get all kinds of refreſhment. On our journey from *Penſylvania* to *New Jerſey*, we were brought over the *Delaware* in a ferry belonging to, and kept in repair by the *Penſylvania-men*; but on our return we were obliged to take the ferry belonging to the *New Jerſey* ſide. As ſoon as we had croſſed the river, we were in a different province, for the *Delaware* makes the diviſion between *Penſylvania* and *New Jerſey*, ſo that every thing to the weſt of it belongs to the former, and all to the eaſt, to the latter province. Both theſe provinces have in moſt things different laws, and their peculiar coin.

We now purſued our journey further, and ſoon obſerved that the country on this ſide appeared very different from that on the

the other; for in *Penſylvania* the ground conſiſts of more clay and black mould, and is very fertile; but in *New Jerſey* it is more ſandy and very poor, ſo that the horſes went very deep in ſand in ſeveral parts of the road. Near the place where we were brought over, and a little way along the ſhore was a thick firwood: the trees were not very high, but in their greateſt vigour; between them appeared now and then a low buſh of oak. But after travelling about three Engliſh miles, the firwood ended, and we ſaw no more trees of this kind till we came to the church in *Raccoon*. In all the parts of *Penſylvania* where I have been, I have found few firwoods; on the other hand, they are abundant in *New Jerſey*, and eſpecially in the lower part of that province. We afterwards found all the day long no other trees, than ſuch as have deciduous leaves; moſt of theſe were oaks of different ſorts, and of conſiderable height, but they ſtood every where far enough aſunder, to admit a chaiſe to paſs through the wood without any inconvenience, there being ſeldom any ſhrubs or underwood between the trees, to obſtruct the way. The leaves were all fallen, and covered the ground more than a hand's breadth: this had an appearance of encreaſing the upper black ſoil greatly. In

ſeveral

ſeveral places flowed a ſmall rivulet. The country was commonly plain, but ſometimes formed a few hills with an eaſy declivity, though no high mountains appeared, and in a few places we found ſome ſmall ſtones not bigger than a fiſt. Single farm houſes were ſcattered in the country, and in one place only was a ſmall village: the country was yet more covered with foreſts than cultivated, and we were for the greateſt part always in a wood.

This day and the next we paſſed ſeveral *Kills*, or ſmall rivulets which flowed out of the country into the *Delaware* with no great deſcent nor rapidity. When the tide came up in the *Delaware*, it likewiſe roſe in ſome of theſe rivulets a good way; formerly they muſt have ſpread to a conſiderable breadth by the flowing of the tide, but at preſent there were meadows on their banks, formed, by throwing up ſtrong dykes as cloſe as poſſible to the water, to keep it from overflowing. Such dykes were made along all rivers here to confine their water; therefore when the tide was higheſt, the water in the rivers was much higher than the meadows: in the dykes were gates through which the water can be drawn from, or led into the meadows; they were ſometimes placed on the outward ſide of the wall, ſo that

that the water in the meadows forced it open, but the river water ſhut it.

In the evening we came into the houſe of a *Swede* called *Peter Rambo*, and we ſtaid the night at his houſe.

The pines which we had ſeen to day, and which I have mentioned before, were of that kind which has double leaves and oblong cones covered with aculeated ſcales. The *Engliſh* to diſtinguiſh it call it the *Jerſey Pine*: commonly there were only two ſpines or leaves in one faſcicle, as in our common *Swediſh* pines, but ſometimes three; the cones had long ſpines, ſo that they were difficult to be touched. Theſe pines look at a diſtance wholly like the *Swediſh* ones, ſo that if the cones were not regarded, they might eaſily be taken for the ſame ſpecies. Of theſe pines they make a great quantity of tar, of which I ſhall ſpeak in the ſequel; but as moſt of them are but ſmall, they are good for nothing elſe; for if they be employed as poſts, or poles in the ground, they are in a ſhort time rendered uſeleſs by rotting: as ſoon as they are cut down the worms are very greedy of them; they ſoon eat through the wood, and only a few weeks after it is cut down; however it is made uſe of as fuel where no other wood

wood is to be got, in ſeveral places they make charcoal of it, as I intend to mention in the ſequel. There is another thing which deſerves notice, in regard to theſe trees, and which ſeveral people, beſides myſelf, have experienced. In the great heat of the ſummer, the cattle like to ſtand in the ſhade of theſe trees, preferably to that of the oak, hiccory, walnut, water-beech and other trees of this kind, whoſe foliage is very thick; and when the cattle find the latter with the former, they always chooſe to ſtand under the firs and pines, though the other trees with annually deciduous leaves could afford a better ſhade: and if there be but a ſingle pine in a wood, as many cattle from the herd as can ſtand under it, throng to it. Some people would infer from hence, that the reſinous exhalations of theſe trees, were beneficial to the cattle, and which made them more inclined to be near firs and pines, than any other trees.

The *Spoon tree*, which never grows to a great height, we ſaw this day in ſeveral places. The *Swedes* here have called it thus, becauſe the Indians who formerly lived in theſe provinces, uſed to make their ſpoons and trowels of the wood of this tree. In my cabinet of natural curioſities, I have a ſpoon

a ſpoon made of this wood by an Indian, who has killed many ſtags and other animals on the very ſpot where *Philadelphia* afterwards was built; for in his time that ſpot was yet covered with trees and ſhrubs. The Engliſh call this tree a *Laurel*, becauſe its leaves reſemble thoſe of the Laurocerasus. Dr. *Linnæus*, conformable to the peculiar friendſhip and goodneſs which he has always honoured me with, has been pleaſed to call this tree, *Kalmia foliis ovatis, corymbis terminalibus*, or *Kalmia latifolia*. It ſucceeds beſt on the ſide of hills, eſpecially on the north ſide, where a brook paſſes by; therefore on meeting with ſome ſteep places (on hills) towards a brook, or with a ſteep ſide of a hill towards a marſh, you are ſure to find the *Kalmia*. But it frequently ſtands mixed among beech trees. The higher the Kalmias ſtand on the north ſide of a mountain, the leſs they grow: I have ſeen them not only in *Penſylvania* and *New Jerſey*, but even in *New York*, but there they are more ſcarce: I never found them beyond the forty-ſecond deg. of north lat. though I took ever ſo great care to look for them: they have the quality of preſerving their fine green leaves throughout winter, ſo that when all other trees have loſt their ornaments, and ſtand quite naked, theſe chear

chear the woods with their green foliage. About the month of *May* they begin to flower in theſe parts, and then their beauty rivals that of moſt of the known trees in nature: the flowers are innumerable, and ſit in great bunches. Before they open, they have a fine red colour, but as they are expanded, the ſun bleaches them, ſo that ſome are quite white; many preſerve the colour of roſes. Their ſhape is ſingular, for they reſemble a crater of the ancients: their ſcent however is none of the moſt agreeable. In ſome places it was cuſtomary to adorn the churches on chriſtmas day or new-years day with the fine branches of this tree, which are then thick covered with leaves.

But theſe trees are known for another remarkable quality; their leaves are poiſon to ſome animals, and food for others: experience has taught the people that when ſheep eat of theſe leaves, they either die immediately, or fall very ſick, and recover with great difficulty. The young and more tender ſheep are killed by a ſmall portion, but the elder ones can bear a ſtronger doſe. Yet this food will likewiſe prove mortal to them, if they take too much of it: the ſame noxious effect it ſhews in regard to calves which eat too much of the leaves:

they either die, or do not recover eaſily. I can remember, that in the autumn of the year 1748, ſome calves eat of the leaves, but fell very ſick, ſwelled, foamed at the mouth, and could hardly ſtand, however they were cured by giving them gunpowder and other medicines: the ſheep are moſt expoſed to be tempted by theſe leaves in winter; for after having been kept in ſtables, for ſome months they are greedy of all greens eſpecially if the ſnow ſtill lies upon the fields, and therefore the green but poiſonous leaves of the Kalmia, are to them very tempting. Horſes, oxen and cows which have eaten them, have likewiſe been very ill after the meal, and though none of them ever died of eating theſe leaves, yet moſt people believed, that if they took too great a portion of them, death would certainly be the reſult. For it has been obſerved that when theſe animals only eat ſmall quantities, yet they ſuffer great pains. On the other hand the leaves of the Kalmia are the food of ſtags, when the ſnow covers the ground, and hides all other proviſions from them. Therefore, if they be ſhot in winter, their bowels are found filled with theſe leaves; and it is very extraordinary, that if thoſe bowels are given to dogs, they become quite ſtupid and as it were drunk,

and

and often fall ſo ſick, that they ſeem to be at the point of death, but the people, who have eaten the veniſon, have not felt the leaſt indiſpoſition. The leaves of the Kalmia are likewiſe the winter food of thoſe birds, which the *Swedes* in *North America* call *Hazel-hens*, and which ſtay here all winter, for when they are killed, their crop is found quite filled with them.

THE wood of the *Kalmia* is very hard, and ſome people on that account, make the axis of their pullies of it. Weavers ſhuttles are chiefly made of it, and the weavers are of opinion, that no wood in this country is better for this purpoſe, for it is compact, may be made very ſmooth, and does not eaſily crack, or burſt. The joiners and turners here, employ it in making all kinds of work, which requires the beſt wood; they chiefly uſe the root becauſe it is quite yellow; the wood has a very ſuitable hardneſs and fineneſs, and from the center, ſpread as it were ſmall rays, which are at ſome diſtance from each other. When the leaves of the *Kalmia* are thrown into the fire, they make a crackling like ſalt. The chimney ſweepers make brooms in winter of the branches with the leaves on them, ſince they cannot get others in that ſeaſon. In the ſummer of the year 1750, a certain

kind of worms, devoured the leaves of almoſt all the trees in *Penſylvania*; yet they did not venture to attack the leaves of the Kalmia. Some people aſſerted, that when a fire happened in the woods, it never went further, as ſoon as it came to the Kalmias, or *Spoon trees*.

November the 21ſt. THE *Swedes* and all the other inhabitants of the country plant great quantities of maize, both for themſelves and for their cattle. It was aſſerted that it is the beſt food for hogs, becauſe it makes them very fat, and gives their fleſh an agreeable flavour, preferable to all other meat. I have given in two diſſertations upon this kind of corn to the *Swediſh Royal Academy of Sciences*, which ſtand in their *Memoirs*, one in the Volume for the year 1751, in the laſt quarter, and the other in the firſt quarter of the Volume for the year 1752, and thither I refer my readers.

THE wheels of the carts which are here made uſe of, are compoſed of two different kinds of wood. The felloes were made of what is called the *Spaniſh* oak, and the ſpokes of the white oak.

THE *Saſſafras* tree grows every where in this place. I have already obſerved ſeveral particulars in regard to it, and intend to add a few more here. On throwing

throwing ſome of the wood into the fire, it cauſes a crackling as ſalt does. The wood is made uſe of for poſts belonging to the encloſures, for it is ſaid to laſt a long time in the ground: but it is likewiſe ſaid, that there is hardly any kind of wood, which is more attacked by worms than this, when it is expoſed to the air without cover, and that in a ſhort time it is quite worm-eaten through and through. The *Swedes* related, that the *Indians* who formerly inhabited theſe parts, made bowls of it. On cutting ſome part of the ſaſſafras tree, or its ſhoots, and holding it to the noſe, it has a ſtrong but pleaſant ſmell. Some people peel the root, and boil the peel with the beer which they are brewing, becauſe they believe it wholeſome for the ſame reaſon. The peel is put into brandy, either whilſt it is diſtilling, or after it is made.

An old *Swede* remembered that his mother cured many people of the dropſy, by a decoction of the root of ſaſſafras in water drank every morning: but ſhe uſed, at the ſame time to cup the patient on the feet. The old man aſſured me, he had often ſeen people cured by this means, who had been brought to his mother wrapped up in ſheets.

When a part of a wood is deſtined for cultivation, the ſaſſafras trees are commonly left upon it, becauſe they have a very thick foliage, and afford a cool ſhade to the cattle, during the great heats. Several of the *Swedes*, waſh and ſcour the veſſels in which they intend to keep cyder, beer or brandy, with water in which the ſaſſafras root or its peel has been boiled; which they think renders all thoſe liquors more wholeſome. Some people get their bed-poſts made of ſaſſafras wood, in order to expel the bugs; for its ſtrong ſcent it is ſaid prevents thoſe vermin from ſettling in them. For two or three years together this has the deſired effect; or about as long as the wood keeps its ſtrong aromatic ſmell; but after that time it has been obſerved to loſe it effect. A joiner ſhewed me a bed, which he had made for himſelf, the poſts of which were of ſaſſafras wood, but as it was ten or twelve years old, there were ſo many bugs in it, that it ſeemed likely, they would not let him ſleep peaceably. Some *Engliſhmen* related, that ſome years ago it had been cuſtomary in *London*, to drink a kind of tea of the flowers of ſaſſafras, becauſe it was looked upon as very ſalutary; but upon recollecting that the ſame potion was much uſed againſt the venereal diſeaſe,

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it was ſoon left off, leſt thoſe that uſed it, ſhould be looked upon as infected with that diſeaſe. In *Penſylvania* ſome people put chips of ſaſſafras into their cheſts, where they keep all ſorts of woollen ſtuffs, in order to expel the moths (or *Larvæ*, or caterpillars of moths or tinies) which commonly ſettle in them in ſummer. The root keeps its ſmell for a long while: I have ſeen one which had lain five or ſix years in the drawer of a table, and ſtill preſerved the ſtrength of its ſcent.

A SWEDE named *Rambo*, related that the Indians formerly dyed all ſorts of leather red with the bark of the cheſnut oak.

SOME old people remembered that in the year 1697, there had been ſo rigorous a winter, that the ice in the river *Delaware* was two feet thick.

November the 22d. AOKE HELM was one of the moſt conſiderable *Swedes* in this place, and his father came over into this country along with the *Swediſh* governor *Prince*; he was upwards of ſeventy years of age. This old man told us, that in his youth there was graſs in the woods, which grew very cloſe, and was every where two feet high; but, that it was ſo much leſſened at preſent, that the cattle hardly find food enough, and that therefore four cows now give no more milk than one at that time;

but the cauſes of this alteration are eaſy to find. In the younger years of old *Helm*, the country was little inhabited, and hardly the tenth part of the cattle kept which is at preſent; a cow had therefore as much food at that time, as ten now have. Further, moſt kinds of graſs here are annual, and do not for ſeveral years together ſhoot up from the ſame root, as our *Swediſh* graſſes: they muſt ſow themſelves every year, becauſe the laſt year's plant dies away every autumn. The great numbers of cattle hinder this ſowing, as the graſs is eaten before it can produce flowers and fruit. We need not therefore wonder that the graſs is ſo thin on fields, hills, and paſtures in theſe provinces. This is likewiſe the reaſon why travellers in *New Jerſey*, *Penſylvania*, and *Maryland*, find many difficulties, eſpecially in winter, to get forwards with their own horſes, for the graſs in theſe provinces is not very abundant, becauſe the cattle eat it before it can bring ſeeds: but more to the north, as in *Canada*, are a ſufficient quantity of perennial graſſes; ſo wiſely has the Creator regulated every thing. The cold parts of the earth, naturally bring forth a more durable graſs, becauſe the inhabitants want more hay to feed their cattle with, on account of the length of the winter.

ter. The ſouthern provinces again have leſs perennial graſs, as the cattle may be in the fields all the winter. However careful œconomiſts have got ſeeds of perennial graſſes from *England*, and other *European* ſtates, and ſowed it in their meadows, where they ſeem to thrive exceedingly well.

The *Perſimon (Dioſpyros Virginiana)* was pretty common here: I have already mentioned it before, but I intend now to add ſome more particulars. Some of its fruits began to ripen and to become fit for eating about this time, for they always ripen very late in autumn, and then the people eat them like other fruit: they are very ſweet and glutinous, yet have a little aſtringency; I frequently uſed to eat a great quantity of them, without feeling the leaſt inconvenience. From the perſimon ſeveral *Engliſhmen* and *Swedes* brew a very palatable liquor in the following manner. As ſoon as the fruit is ripe, a ſufficient quantity is gathered, which is very eaſy, as each tree is well ſtocked with them. Theſe perſimon apples are put into a dough of wheat or other flour, formed into cakes, and put into an oven, in which they continue till they are quite baked, and ſufficiently dry, when they are taken out again: then, in order to brew the liquor, a pot full of water is put on the fire

fire and ſome of the cakes are put in: theſe become ſoft by degrees as the water grows warm, and crumble in pieces at laſt; the pot is then taken from the fire, and the water in it well ſtirred about, that the cakes may mix with it: this is then poured into another veſſel, and they continue to ſteep and break as many cakes as are neceſſary for a brewing: the malt is then infuſed, and they proceed as uſual with the brewing. Beer thus prepared is reckoned much preferable to other beer. They likewiſe make brandy of this fruit in the following mannner: having collected a ſufficient quantity of perſimons in autumn, they are altogether put into a veſſel, where they lie for a week till they are quite ſoft. Then they pour water on them, and in that ſtate they are left to ferment of themſelves, without promoting the fermentation by any addition. The brandy is then made in the common way, and is ſaid to be very good, eſpecially if grapes (in particular of the ſweet ſort) which are wild in the woods, be mixed with the perſimon fruit. Some perſimons are ripe at the end of *September*, but moſt of them later, and ſome not before *November* and *December*, when the cold firſt overcomes their acrimony. The wood of this tree is very good for joiner's inſtruments, ſuch

ſuch as planes, handles to chiſels, &c. but if after being cut down, and lain expoſed to ſunſhine and rain, it is the firſt wood which rots, and in a year's time there is nothing left but what is uſeleſs. When the perſimon trees get once into a field, they are not eaſily got out of it again, as they ſpread ſo much. I was told, that if you cut off a branch and put it into the ground, it ſtrikes root, but in very ſtrong winters, theſe trees often die by froſt, and they, together with the peach trees, bear cold the leaſt of any.

November the 23d. SEVERAL kinds of gourds and melons are cultivated here; they have partly been originally cultivated by the Indians, and partly brought over by *Europeans*. Of the gourds there was a kind which were crooked at the end, and oblong in general, and therefore they were called *crooked necks* (Crocknacks;) they keep almoſt all winter. There is yet another ſpecies of gourds which have the ſame quality: others again are cut in pieces or ſlips, drawn upon thread and dried; they keep all the year long, and are then boiled or ſtewed. All ſorts of gourds are prepared for eating in different manners, as is likewiſe cuſtomary in *Sweden*. Many farmers have a whole field of gourds.

SQUASHES

SQUASHES are a kind of gourds, which the *Europeans* got from the Indians, and I have already mentioned them before. They are eaten boiled, either with fleſh or by themſelves. In the firſt caſe, they are put on the edge of the diſh round the meat; they require little care, for into whatever ground they are ſown, they grow in it and ſucceed well. If the ſeed is put into the fields in autumn, it brings ſquaſhes next ſpring, though during winter it has ſuffered from froſt, ſnow and wet.

THE *Calabaſhes* are likewiſe gourds, which are planted in quantities by the *Swedes* and other inhabitants, but they are not fit for eating, and are made uſe of for making all ſorts of veſſels; they are more tender than the ſquaſhes, for they do not always ripen here, and only when the weather is very warm. In order to make veſſels of them, they are firſt dried well: the ſeeds, together with the pulpy and ſpungy matter in which they lie, are afterwards taken out and thrown away. The ſhells are ſcraped very clean within, and then great ſpoons or ladles, funnels, bowls, diſhes and the like may be made of them; they are particularly fit for keeping ſeeds of plants in, which are to be ſent over ſea, for they keep their power of vegetating much longer, if they be

be put in calabaſhes, than by any other means. Some people ſcrape the outſide of the calabaſhes before they are opened, dry them afterwards and then clean them within; this makes them as hard as bones: they are ſometimes waſhed, ſo that they always keep their white colour.

Most of the farmers in this country, ſow *Buck-wheat*, in the middle of *July*; it muſt not be ſown later, for in that caſe the froſt ruins it, but if it be ſown before *July*, it flowers all the ſummer long, but the flowers drop, and no ſeed is generated. Some people, plough the ground twice where they intend to ſow buck-wheat; others plough it only once, about two weeks before they ſow it. As ſoon as it is ſown the field is harrowed. It has been found by experience, that in a wet year buck-wheat is moſt likely to ſucceed: it ſtands on the fields till the froſt comes on. When the crop is favourable, they get twenty, thirty and even forty buſhels from one. The *Swediſh* churchwarden *Ragnilſon*, in whoſe houſe we were at this time, had got ſuch a crop: they make buck-wheat cakes and pudding. The cakes are commonly made in the morning, and are baked in a frying pan, or on a ſtone: are buttered and then eaten with tea or coffee, inſtead

inſtead of toaſted bread with butter, or toaſt, which the *Engliſh* commonly eat at breakfaſt. The buck-wheat cakes are very good, and are likewiſe uſual at *Philadelphia* and in other *Engliſh* colonies, eſpecially in winter. Buck-wheat is an excellent food for fowls; they eat it greedily, and lay more eggs, than they do with other food: hogs are likewiſe fattened with it. Buck-wheat ſtraw is of no uſe; it is therefore left upon the field, in the places where it has been thraſhed, or it is ſcattered in the orchards, in order to ſerve as a manure by putrifying. Neither cattle nor any other animal will eat of it, except in the greateſt neceſſity, when the ſnow covers the ground and nothing elſe is to be met with. But though buck-wheat is ſo common in the *Engliſh* colonies, yet the *French* had no right notion of it in *Canada*, and it was never cultivated among them.

Towards night we found ſome *Glow Worms* in the wood, their body was linear, conſiſting of eleven articulations, a little pointed before and behind; the length from head to tail was five and a half geometrical lines; the colour was brown and the articulations joined in the ſame manner as in the oniſci or woodlice. The antennæ or feel horns were ſhort and filiform, or thread-

ſhaped;

ſhaped; and the feet were faſtened to the foremoſt articulations of the body: when the inſect creeps, its hindmoſt articulations are dragged on the ground, and help its motion. The extremity of the tail contain a matter which ſhines in the dark, with a green light: the inſect could draw it in, ſo that it was not viſible. It had rained conſiderably all day, yet they crept in great numbers among the buſhes, ſo that the ground ſeemed as it were ſown with ſtars. I ſhall in the ſequel have occaſion to mention another kind of inſects or flies which ſhine in the dark, when flying in the air.

November the 24th. HOLLY, or *Ilex Aquifolium*, grows in wet places, ſcattered in the foreſt, and belongs to the rare trees; its leaves are green both in ſummer and in winter. The *Swedes* dry its leaves, bruiſe them in a mortar, boil them in ſmall beer, and take them againſt the pleuriſy.

RED is dyed with braſil wood, and likewiſe with a kind of moſs, which grows on the trees here: *blue* is dyed with *Indigo*, but to get a black colour, the leaves of the common field ſorrel (*Rumex Acetoſella*) are boiled with the ſtuff to be dyed, which is then dried, and boiled again with *log-wood* and copperas: the black colour thus produced,

ced, is ſaid to be very durable. The people ſpin and weave a great part of their every day's apparel, and dye them in their houſes. Flax is cultivated by many people, and ſucceeds very well, but the uſe of hemp is not very common.

RYE, wheat, and buck-wheat are cut with the ſickle, but oats are mown with a ſcythe. The ſickles which are here made uſe of are long and narrow, and their ſharp edges have cloſe teeth on the inner ſide. The field lies fallow during a year, and in that time the cattle may graze on it.

ALL the inhabitants of this place from the higheſt to the loweſt, have each their orchard, which is greater or leſs according to their wealth. The trees in it are chiefly peach trees, apple trees and cherry trees: compare with this what I have already ſaid upon this ſubject before.

A LITTLE before noon, we left this place and continued our journey, paſt the *Swediſh* church in *Raccoon*, to *Peils groves*. The country, on the ſides of this road, is very ſandy in many places and pretty near level. Here and there appear ſingle farms, yet they are very ſcarce, and large extenſive pieces of ground are ſtill covered with foreſts, which chiefly conſiſt of ſeveral ſpecies of oak and hiccory. However we could

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go with eaſe through theſe woods, as there are few buſhes (or under-wood) and ſtones to be met with. It was not only eaſy to ride in every part of the wood on horſe-back, but even in moſt places there was ſufficient room for a ſmall coach or a cart. Sometimes a few lying trees which had been thrown on the ground by a hurricane, or had fallen down through great age, cauſed ſome hindrance.

November the 25th. DURING my ſtay at *Raccoon*, at this time and all the enſuing winter, I endeavoured to get the moſt information from the old *Swedes* relating to the increaſe of land, and the decreaſe of water in theſe parts; I ſhall therefore inſert the anſwers here, which I have received to my queſtions. They are as I got them, and I ſhall only throw in a few remarks which may ſerve to explain things: the reader therefore is left at liberty to draw his own inferences and concluſions.

ONE of the *Swedes*, called *King*, who was above fifty years of age, was convinced, that about this time the little lakes, brooks, ſprings and rivers had much leſs water, than they had when he was a boy. He could mention ſeveral lakes on which the people went in large boats in his youth, and had ſufficient water even in the hotteſt

ſummers; but now, they were either entirely dried up, or for the greateſt part; and in the latter caſe, all the water was loſt in ſummer. He had himſelf ſeen the fiſh dying in them, and he was apt to believe that at this time it did not rain ſo much in ſummer, as it did when he was young. One of his relations, who lived about eight miles from the river *Delaware*, on a hill near a rivulet, had got a well, dug in his court yard: at the depth of forty feet, they found a quantity of ſhells of oyſters and muſcles, and likewiſe a great quantity of reed, and pieces of broken branches. I aſked, to what cauſes they aſcribed what they had diſcovered? and I was anſwered, that ſome people believed theſe things had lain there ever ſince the deluge, and others, that the ground increaſed.

PETER RAMBO, a man who was near ſixty years of age, aſſured me that in ſeveral places at *Raccoon*, where wells had been dug, or any other work carried deep into the ground, he had ſeen great quantities of muſcle ſhells and other marine animals. On digging wells, the people have ſometimes met with logs of wood at the depth of twenty feet, ſome of which were putrified, and others as it were burnt. They once found a great ſpoon in the ground,

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at this depth. Query, Is it not probable, that the burnt wood which has been thus dug up, was only blackened by a subterraneous mineral vapour? People however have concluded from this, that *America* has had inhabitants before the deluge. This man *(Peter Rambo)* further told me, that bricks had been found deep in the ground; but may not the brick coloured clay (of which the ground here chiefly consists, and which is a mixture of clay and sand) in a hard state have had the appearance of bricks? I have seen such hardened clay, which at first sight is easily mistaken for brick. He likewise asserted, that the water in rivers was still as high as it used to be, as far back as memory could reach; but little lakes, ponds, and waters in marshes are visibly decreased, and many of them dried up.

Maons Keen, a *Swede* above seventy years old, asserted, that on digging a well he had seen at the depth of forty feet, a great piece of chesnut wood, together with roots and stalks of reed, and a clayey earth like that which commonly covers the shores of salt water bays and coves. This clay had a similar smell and a saline taste. *Maons Keen* and several other people inferred from hence, that the whole country where *Raccoon* and *Penn*'s *neck* are situated, was ancient-

ly quite overflowed by the ſea. They likewiſe knew, that at a great depth in the ground, ſuch a trowel as the Indians make uſe of, had been found.

SVEN LOCK, and *William Cobb*, both above fifty years of age agreed, that in many places hereabouts, where wells had been dug, they had ſeen a great quantity of reed, moſtly rotten, at the depth of twenty or thirty feet and upwards.

As *Cobb* made a well for himſelf, the workmen after digging twenty feet deep, came upon ſo thick a branch, that they could not get forwards, till it was cut in two places; the wood was ſtill very hard. It is very common to find near the ſurface of the earth, quantities of all ſorts of leaves not quite putrified. On making a dyke ſome years ago, along the river on which the church at *Raccoon* ſtands; and for that purpoſe cutting through a bank, it was found quite full of oyſter ſhells, though this place is above a hundred and twenty Engliſh miles from the neareſt ſea ſhore. Theſe men, and all the inhabitants of *Raccoon*, concluded from this circumſtance (of their own accord, and without being led to the thought) that this tract of land was a part of the ſea many centuries ago. They likewiſe aſſerted that many little lakes, which

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in their youth were full of water, even in the hotteſt ſeaſon, now hardly formed a narrow brook in ſummer, except after heavy rains; but it did not appear to them that the rivers had loſt any water.

Aoke Helm, found (on digging a well) firſt ſand and little ſtones, to the depth of eight feet; next a pale coloured clay, and then a black one. At the depth of fifteen feet he found a piece of hard wood, and ſeveral pieces of mundick or pyrites. He told me that he knew ſeveral places in the *Delaware*, where the people went in boats, when he was young; but which at preſent were changed into little iſlands, ſome of which were near an *Engliſh* mile in length. Theſe iſlands derive their origin from a ſand or bank in the river; on this the water waſhes ſome clay, in which ruſhes come up, and thus the reſt is generated by degrees.

On a meeting of the oldeſt *Swedes* in the pariſh of *Raccoon*, I obtained the following anſwers to the queſtions which I aſked them on this account. Whenever they dig a well in this neighbourhood, they always find at the depth of twenty or thirty feet, great numbers of oyſter ſhells and clams: the latter are, as was above-mentioned, a kind

of large ſhells, which are found in bays, and of which the Indians make their money. In many places, on digging wells a quantity of ruſhes and reeds have been found almoſt wholly undamaged; and once on ſuch an occaſion a whole bundle of flax was brought up, found between twenty and thirty feet under ground; it ſeemed as little damaged as if it had been lately put under ground; all looked at it with aſtoniſhment, as it was beyond conception how it could get there; but I believe the good people ſaw ſome *American* plants, ſuch as the wild *Virginian* flax, or *Linum Virginianum*, and the *Antirrhinum Canadenſe*, which look very like common flax, yet it is remarkable that the bundle was really tied together. The *Europeans* on their arrival in *America*, found our common flax neither growing wild nor cultivated by the Indians, how then could this bundle get into the ground? Can it be ſuppoſed, that paſt ages have ſeen a nation here, ſo early acquainted with the uſe of flax? I would rather abide by the opinion, that the above *American* plants, or other ſimilar ones, have been taken for flax. Charcoal and firebrands have often been found under ground: The *Swediſh* churchwarden, *Eric Ragnilſon*, told me that he had ſeen a quantity of them, which

which had been brought up at the digging of a well: on ſuch occaſions, people have often found (at the depth of between twenty and fifty feet) great branches and blocks. There were ſome ſpots where twenty feet under the ſurface of the earth, the people had found ſuch trowels as the Indians uſe: from theſe obſervations they all concluded, that this tract of land had formerly been the bottom of the ſea. It is to be obſerved, that moſt of the wells which have hitherto been made, have been dug in new ſettlements, where the wood was yet ſtanding, and had probably ſtood for centuries together. From the obſervations which have hitherto been mentioned, and to which I ſhall add ſimilar ones in the ſequel, we may, with a conſiderable degree of certainty conclude, that a great part of the province of *New Jerſey*, in ages unknown to poſterity, was part of the bottom of the ſea, and was afterwards formed by the ſlime and mud, and the many other things which the river *Delaware* carries down along with it, from the upper parts of the country: however *Cape May* ſeems to give ſome occaſion for doubts, of which I ſhall ſpeak in the ſequel.

November the 27th. THE *American* evergreens are

1. *Ilex Aquifolium*, holly.
2. *Kalmia latifolia*, the ſpoon tree.
3. *Kalmia anguſtifolia*, another ſpecies of it.
4. *Magnolia glauca*, the beaver tree. The young trees of this kind only keep their leaves, the others drop them.
5. *Viſcum album*, or miſletoe; this commonly grows upon the *Nyſſa aquatica*, or tupelo tree, upon the *Liquidambar ſtyraciflua*, or ſweet gum tree, the oak and lime tree, ſo that their whole ſummits were frequently quite green in winter.
6. *Myrica cerifera*, or the candleberry tree; of this however only ſome of the youngeſt ſhrubs preſerve ſome leaves, but moſt of them had already loſt them.
7. *Pinus Abies*, the pine.
8. *Pinus ſylveſtris*, the fir.
9. *Cupreſſus thyoides*, the white cedar.
10. *Juniperus Virginiana*, the red cedar.

SEVERAL oaks and other trees dropt their leaves here in winter, which however keep them ever green, a little more to the ſouth, and in *Carolina*.

November the 30th. IT has been obſerved, that the *Europeans* in *North America*, whether they were born in *Sweden*, *England*,

England, Germany or *Holland*; or in *North America*, of *European* parents, always loſt their teeth much ſooner than common; the women eſpecially were ſubject to this diſagreeable circumſtance, the men did not ſuffer ſo much from it. Girls not above twenty years old, frequently had loſt half of their teeth, without any hopes of getting new ones: I have attempted to penetrate into the cauſes of this early ſhedding of the teeth, but I know not, whether I have hit upon a true one. Many people were of opinion that the air of this country hurt the teeth: ſo much is certain that the weather can no where be ſubject to more frequent and ſudden changes; for the end of a hot day, often turns out piercing cold, and *vice verſa*. Yet this change of weather, cannot be looked upon as having any effect upon the ſhedding of the teeth, for the *Indians* prove the contrary: they live in the ſame air, and always keep fine, entire white teeth; this I have ſeen myſelf, and have been aſſured of by every body: others aſcribe it to the great quantities of fruit and ſweet meats which are here eaten. But I have known many people, who never eat any fruit, and nevertheleſs had hardly a tooth left.

I THEN began to ſuſpect the tea, which

is

is drank here in the morning and afternoon, eſpecially by women, and is ſo common at preſent, that there is hardly a farmer's wife or a poor woman, who does not drink tea in the morning: I was confirmed in this opinion when I took a journey through ſome parts of the country which were ſtill inhabited by *Indians*. For Major General *Johnſon* told me at that time, that ſeveral of the *Indians* who lived cloſe to the *European* ſettlements, had learnt to drink tea. And it has been obſerved, that ſuch of the *Indian* women, as uſed themſelves too much to this liquor, had in the ſame manner as the *European* women, loſt their teeth prematurely, though they had formerly been quite ſound. Thoſe again, who had not uſed tea preſerved their teeth ſtrong and ſound to a great age.

I AFTERWARDS found, that the uſe of tea could not entirely cauſe this accident. Several young women who lived in this country, but were born in *Europe*, complained that they loſt moſt of their teeth after they came to *America*: I aſked, whether they did not think that it aroſe from the frequent uſe of tea, as it was known, that ſtrong tea, as it were enters into and corrodes the teeth; but they anſwered, that they had loſt their teeth before they had

had began to drink tea, but continuing my enquiries, I found at laſt a ſufficient cauſe, to account for the loſs of their teeth: each of theſe women owned, that they were accuſtomed to eat every thing hot, and nothing was good in their opinion, unleſs they could eat it as faſt as it came from the fire. This is likewiſe the caſe with the women in the country who loſe their teeth much ſooner and more abundantly than the men. They drink tea in greater quantity and much oftener, in the morning, and even at noon, when the employment of the men will not allow them to ſit at the tea-table. Beſides that, the *Engliſhmen* care very little for tea, and a bowl of punch is much more agreeable to them. When the *Engliſh* women drink tea, they never pour it out of the cup into the ſaucer, but drink it hot as it is out of the former. The *Indian* women in imitation of them, ſwallow the tea in the ſame manner. On the contrary thoſe Indians whoſe teeth are ſound, never eat any thing hot, but take their meat either quite cold, or only juſt milk warm.

I ASKED the *Swediſh* churchwarden in *Philadelphia*, Mr. *Bengtſon*, and a number of old *Swedes*, whether their parents and countrymen had likewiſe loſt their teeth as ſoon as the *American* coloniſts; but they told

told me that they had preſerved them to a very great age. *Bengtſon* aſſured me, that his father at the age of ſeventy, cracked peach ſtones and the black walnuts with his teeth, notwithſtanding their great hardneſs, which at this time no body dares to venture at that age. This confirms what I have before ſaid, for at that time the uſe of tea was not yet known in *North America*.

No diſeaſe is more common here, than that which the *Engliſh* call *fever and ague*, which is ſometimes quotidian, tertian or quartan. But it often happens, that a perſon who has had a tertian ague, after loſing it for a week or two, gets a quotidian ague in its ſtead, which after a while again changes into a tertian. The fever commonly attacks the people at the end of *Auguſt*, or beginning of *September*, and commonly continues during autumn and winter till towards ſpring, when it ceaſes entirely.

STRANGERS who arrive here, commonly are attacked by this ſickneſs the firſt or ſecond year after their arrival; and it is more violent upon them, than upon the natives, ſo that they ſometimes die of it; but if they eſcape the firſt time, they have the advantage of not being viſited again the next year, or perhaps never any more. It is commonly

commonly ſaid here, that ſtrangers get the fever to accuſtom them to the climate. The natives of *European* offspring, have annual fits of this ague in ſome parts of the country: ſome however are ſoon delivered from it, with others on the contrary it continues for ſix months together, and others are afflicted with it till they die. The Indians alſo ſuffer it, but not ſo violently as the *Europeans*. No age is ſecured againſt it: in thoſe places where it rages annually, you ſee old men and women attacked with it; and even children in the cradle, ſometimes not above three weeks old: it is likewiſe quotidian, tertian or quartan with them. This autumn the ague was more violent here, than it commonly uſed to be. People who are afflicted with it, look as pale as death, and are greatly weakened, but in general are not prevented from doing their work in the intervals. It is remarkable, that every year there are great parts of the country where this fever rages, and others where ſcarce a ſingle perſon has been taken ill. It likewiſe is worth notice, that there are places where the people cannot remember that it formerly prevailed in their country, though at preſent it begins to grow more common: yet there was no other viſible difference between the ſeveral places

places. All the old *Swedes*, *Engliſhmen*, *Germans*, &c. unanimouſly aſſerted, that the fever had never been ſo violent, and of ſuch continuance when they were boys, as it is at preſent. They were likewiſe generally of opinion, that about the year 1680, there were not ſo many people afflicted with it, as about this time. However others equally old, were of opinion that the fever was proportionably as common formerly, as it is at preſent; but that it could not at that time be ſo ſenſibly perceived, on account of the ſcarcity of inhabitants, and the great diſtance of their ſettlements from each other; it is therefore probable that the effects of the fever have at all times been equal.

It would be difficult to determine the true cauſes of this diſeaſe; they ſeem to be numerous, and not always alike: ſometimes, and I believe commonly ſeveral of them unite. I have taken all poſſible care to ſound the opinions of the phyſicians here on that head, and I here offer them to the reader.

Some of them think that the peculiar qualities of the air of this country cauſe this fever; but moſt of them aſſert that it is generated by the ſtanding and putrid water, which it ſeems is confirmed by experience.

perience. For it has been obſerved in this country, that ſuch people as live in the neighbourhood of Moraſſes or Swamps, or in places where a ſtagnant, ſtinking water is to be met with, are commonly infeſted with the fever and ague every year, and get it more readily than others. And this chiefly happens at a time of the year when thoſe ſtagnant waters are moſt evaporated by the exceſſive heat of the ſun, and the air is filled with the moſt noxious vapors. The fever likewiſe is very violent in all places which have a very low ſituation, and where ſalt water comes up with the tide twice in twenty four hours, and unites with the ſtagnant, freſh water in the country. Therefore on travelling in ſummer over ſuch low places where freſh and ſalt water unite, the nauſeous ſtench ariſing from thence often forces the traveller to ſtop his noſe. On that account moſt of the inhabitants of *Penn*'s *neck*, and *Salem* in *New Jerſey*, where the ground has the above-mentioned quality, are annually infeſted with the fever to a much greater degree, than the inhabitants of the higher country. If an inhabitant of the higher part of the country, where the people are free from the fever, removes into the lower parts, he may be well aſſured that the fever will attack him

him at the uſual time, and that he will get it again every year, as long as he continues in that country. People of the livelieſt complexion on coming into the low parts of the country, and continuing there for ſome time, have entirely loſt their colour and become quite pale. However this cannot be the ſole cauſe of the fever, as I have been in ſeveral parts of the country which had a low ſituation and had ſtagnant waters near them, where the people declared they ſeldom ſuffered from this ſickneſs: but theſe places were about two or three degrees more northerly.

OTHERS were of opinion that diet did very much towards it, and chiefly laid the blame upon the inconſiderate and intemperate conſumption of fruit. This is particularly the caſe with the *Europeans*, who come into *America*, and are not uſed to its climate and its fruit; for thoſe who are born here can bear more, yet are not entirely free from the bad effects of eating too much. I have heard many *Engliſhmen*, *Germans*, and others ſpeak from their own experience on this account; they owned, that they had often tried, and were certain that after eating a water melon once or twice before they had breakfaſted, they would have the fever and ague in a few days

days after. Yet it is remarkable, that the *French* in *Canada* told me that fevers were leſs common in that country, though they conſumed as many water melons as the *Engliſh* colonies, and that it had never been obſerved that they occaſioned a fever; but that on coming in the hot ſeaſon to the *Illinois*, an *Indian* nation which is nearly in the ſame latitude with *Penſylvania* and *New Jerſey*, they could not eat a water melon without feeling the ſhaking fits of an ague, and that the Indians therefore warned them not to eat of ſo dangerous a fruit. Query, Does not this lead us to think that the greater heat in *Penſylvania*, and the country of the *Illinois*, which are both five or ſix degrees more ſoutherly than *Canada*, makes fruit in ſome meaſure more dangerous? In the *Engliſh* North American colonies, every countryman plants a number of water melons, which are eaten whilſt the people make hay, or during the harveſt when they have nothing upon their ſtomachs, in order to cool them during the great heat, as that juicy fruit ſeems very proper to give refreſhment. In the ſame manner melons, cucumbers, gourds, ſquaſhes, mulberries, apples, peaches, cherries, and ſuch like fruit are eaten here in ſummer, and altogether contribute to the attacks of the ague.

But that the manner of living contributes greatly towards it, may be concluded from the unanimous accounts of old people, concerning the times of their childhood; according to which, the inhabitants of theſe parts, were at that time not ſubject to ſo many diſeaſes as they are at preſent, and people were ſeldom ſick. All the old *Swedes* likewiſe agreed, that their countrymen, who firſt came into *North America*, attained to a great age, and their children nearly to the ſame; but that their grand children, and great grand children did not reach the age of their anceſtors, and their health was not near ſo vigorous and durable. But the *Swedes* who firſt ſettled in *America*, lived very frugally; they were poor, and could not buy rum, brandy, or other ſtrong liquors, which they ſeldom diſtilled themſelves, as few of them had a diſtilling veſſel. However they ſometimes had a good ſtrong beer. They did not underſtand the art of making cyder, which is now ſo common in the country: tea, coffee, chocolate, which are at preſent even the country people's daily breakfaſt, were wholly unknown to them: moſt of them had never taſted ſugar or punch. The tea which is now drank, is either very old, or mixed with all ſorts of herbs, ſo that it no longer deſerves

deſerves the name of tea: therefore it cannot have any good effect upon thoſe who uſe it plentifully; beſides, it cannot fail of relaxing the bowels, as it is drank both in the morning and in the afternoon quite boiling hot. The Indians, the offspring of the firſt inhabitants of this country, are a proof of what I have ſaid. It is well known that their anceſtors, at the time of the firſt arrival of the *Europeans*, lived to a very great age. According to the common accounts, it was then not uncommon to find people among the Indians, who were above a hundred years old: they lived frugally, and drank pure water: brandy, rum, wine, and all the other ſtrong liquors, were utterly unknown to them; but ſince the chriſtians have taught them to drink theſe liquors, and the Indians have found them too palatable, thoſe who cannot reſiſt their appetites, hardly reach half the age of their parents.

Lastly, ſome people pretended that the loſs of many odoriferous plants, with which the woods were filled at the arrival of the *Europeans*, but which the cattle has now extirpated, might be looked upon as a cauſe of the greater progreſs of the fever at preſent. The number of thoſe ſtrong plants occaſioned a pleaſant ſcent to riſe in

the woods every morning and evening. It is therefore not unreaſonable to think that the noxiouſneſs of the effluvia from putrifying ſubſtances was then prevented, ſo that they were not ſo dangerous to the inhabitants.

SEVERAL remedies are employed againſt this diſeaſe: the jeſuit's bark was formerly a certain one, but at preſent it has not always this effect, though they ſell it genuine, and for the very beſt. Many people accuſed it of leaving ſomething noxious in the body. Yet it was commonly obſerved, that when the bark was good, and it was taken as ſoon as the fever made its appearance, and before the body was weakened, it was almoſt ſure to conquer the fever, ſo that the cold fits never returned, and no pain or ſtiffneſs remained in the limbs; but when the diſeaſe is rooted in, and has conſiderably weakened the patients, or they are naturally very weak, the fever leaves them after uſing the jeſuit's bark, but returns again in a fortnight's time, and obliges them to take the bark again; but the conſequence frequently is a pain and a ſtiffneſs in their limbs, and ſometimes in their bowels, which almoſt hinders them from walking: this pain continues for ſeveral years together, and even accompanies ſome to the grave. This bad

effect

effect is partly attributed to the bark, which can ſeldom be got genuine here, and partly to the little care which the patients take in uſing the bark. A man of my acquaintance was particularly dexterous in expelling the ague by the uſe of the jeſuit's bark. His manner of proceeding was as follows: when it was poſſible, the patient muſt uſe the remedy as ſoon as the fever begun, and before it was ſettled in his body: but before he took the medicine, he was to take a diaphoretic remedy, as that had been found very ſalutary; and as the fever is frequently of ſuch a nature here, as not to make the patient ſweat, even when the hot fit is upon him, a perſpiration was to be brought about by ſome other means. To that purpoſe the patient took his doſe on the day when he had his cold fit, and was not allowed to eat any thing at night. The next morning he continued in a warm bed, drank a quantity of tea, and was well covered that he might perſpire plentifully. He continued ſo till the perſpiration ceaſed, and then left the bed in a hot room, and waſhed his body with milk warm water, in order to cleanſe it from the impurities that ſettled on it from the perſpiration, and to prevent their ſtopping up of the pores. The patient was then dried again, and at laſt he

took the bark ſeveral times in one day. This was repeated twice or thrice on the days after he had the ague, and it commonly left him without returning, and moſt people recover ſo well, that they do not look pale after their ſickneſs,

THE bark of the root of the *Tulip tree*, or *Liriodendron Tulipifera*, taken in the ſame manner as the jeſuit's bark, ſometimes had a ſimilar effect.

SEVERAL people peeled the roots of the *Cornus florida*, or *Dog wood*, and gave this peel to the patients; and even ſome people, who could not be cured by the jeſuit's bark, have recovered by the help of this. I have likewiſe ſeen people cured of the fever, by taking brimſtone reduced to powder, and mixed with ſugar every night before they went to bed, and every morning before they got up: they took it three or four times in the intervals, and at each time drank ſome warm liquor, to waſh the powder down. However others that tried the ſame remedy did not find much relief from it.

SOME people collected the yellow bark of the peach tree, eſpecially that which is on the root and boiled it in water, till half of it was evaporated by boiling. Of this decoction the patient took every morning about a wine glaſs full, before he had eaten

any

any thing. This liquor has a disagreeable taste, and contracts the mouth and tongue like alum; yet several persons at *Raccoon* who had tried many remedies in vain, were cured by this.

Others boiled the leaves of the *Potentilla reptans*, or of the *Potentilla canadensis*, in water, and made the patients drink it before the ague fit came on, and it is well known that several persons have recovered by this means.

The people who are settled upon the river *Mohawk* in *New York*, both *Indians* and *Europeans* collect the root of the *Geum rivale*, and pound it. This powder some of them boil in water till it is a pretty strong decoction: others only infuse cold water on it and leave it so for a day; others mix it with brandy. Of this medicine the patient is to take a wine glass full on the morning of the day when the fever does not come, before he has eaten any thing. I was assured that this was one of the surest remedies, and more certain than the jesuit's bark.

The people who live near the iron mines, declared that they were seldom or never visited by the fever and ague; but when they have the fever, they drink the water of such fountains, as arise from the

iron mines, and have a ſtrong chalybeat taſte; and they aſſured me that this remedy was infallible. Other people therefore who did not live very far from ſuch ſprings, went to them for a few days, when they had the fever, in order to drink the water, which commonly cured them.

I HAVE already ſhown above, that ſage mixed with lemon juice, has been found very ſalutary againſt the ague.

IT was however univerſally remarkable, that that which cures one perſon of it, has no effect upon another.

THE pleuriſy is likewiſe a diſeaſe which the people of this country are much ſubject to. The *Swedes* in this province call it *ſtitches and burning*, and they always mean the pleuriſy whenever they mention thoſe words. Many of the old *Swedes* told me that they had heard very little of it when they were young, and that their parents had known ſtill leſs of it in their childhood; but that it was ſo common now, that many people died every year of it: yet it has been obſerved, that in ſome years this diſeaſe has been very moderate, and taken few people away with it, whilſt in other years it makes great havock: it likewiſe is more violent in ſome places than in others.

IN the autumn of the year 1728, it ſwept away

away many at *Penn*'s *neck*, a place below *Raccoon*, and nearer to the *Delaware*, where a number of *Swedes* are ſettled. Almoſt all the *Swedes* there died of it, though they were very numerous. From hence it happened that their children who were left in a very tender age, and grew up among the *Engliſh* children, forgot their mother tongue, ſo that few of them underſtand it at preſent. Since that time, though the pleuriſy has every year killed a few people at *Penn*'s *neck*, yet it has not carried off any conſiderable numbers. It reſted as it were till the autumn of the year 1748, but then it began to make dreadful havock, and every week ſix or ten of the old people died. The diſeaſe was ſo violent, that when it attacked a perſon, he ſeldom lived above two or three days; and of thoſe who were taken ill with it, very few recovered. When the pleuriſy was got into a houſe, it killed moſt of the old people in it: it was a true pleuriſy, but it had a peculiarity with it, for it commonly began with a great ſwelling under the throat and in the neck, and with a difficulty of ſwallowing. Some people looked upon it as contagious; and others ſeriouſly declared, that when it came into a family, not only thoſe who lived in the ſame houſe ſuffered from it, but even ſuch relations

tions as lived far off. There have been ſeveral people at *Penn*'s *neck*, who, without viſiting their ſick friends, have got the pleuriſy and died of it: I do not diſpute the truth of this, though I do not agree to the concluſion. The pleuriſy was the moſt violent in *November*; yet ſome old people died of it even in the next winter; but children were pretty free from it. The phyſicians did not know what to make of it, nor how to remedy it.

It is difficult to determine the cauſes of ſuch violent diſeaſes. An old *Engliſh* ſurgeon who lived here gave the following reaſon. The inhabitants of this country drink great quantities of punch and other ſtrong liquors in ſummer, when it is very hot; by that means the veins in the diaphragm contract, and the blood grows thick. Towards the end of *October* and the beginning of *November*, the weather is apt to alter very ſuddenly, ſo that heat and cold change ſeveral times a day. When the people during this changeable weather are in the open air, they commonly get this diſeaſe. It is likewiſe certain that the air is more unwholeſome one year, than another, which depends upon the heat, and other circumſtances: this peculiar quality of the air muſt of courſe produce a pleuriſy.

It

It is remarkable, that both in the year 1728, and in the preſent, when ſo many people died at *Penn*'s *neck*, few died at *Raccoon*, though the two places are near each other, and ſeem to have the ſame ſoil and climate. But there is this difference that *Penn*'s *neck* lies remarkably low, and *Raccoon* pretty high. The people in the former place have ſettled between marſhes and ſwamps, in which the water ſtagnates and putrifies; and moſt of theſe places are covered with trees, by which means the wet is ſhut up ſtill more, and near ſuch marſhes, are the houſes. Laſtly the water at *Penn*'s *neck* is not reckoned ſo good as that in *Raccoon*, but has ſome taſte. It likewiſe becomes brackiſh in ſeveral little rivers when the *Delaware* during the tide riſes very high, and runs up into them. On the banks of theſe rivulets live many of the *Swedes*, and take water for common uſe from them.

December the 3d. THIS morning I ſet out for *Philadelphia*, where I arrived in the evening.

WILD grapes are very abundant in the woods, and of various kinds; a ſpecies of them which are remarkable for their ſize, grow in the marſhes, and are greedily eaten by the *Raccoon*: they are therefore called

marſh

marſh grapes, but the *Engliſh* call them *fox grapes*: they have not an agreeable flavour, and are ſeldom eaten by the inhabitants of this country, who make uſe of a ſmall kind of wild grapes, which grow on a dry ſoil: pretty late in autumn when they are quite ripe, they are eaten raw, and have a very good flavour, being a mixture of ſweet and acid. Some people dry theſe grapes when gathered and bake them in tarts, &c. they likewiſe make uſe of them as dried ſweetmeats. The *Swedes* formerly made a pretty good wine from them; but have now left it off. However ſome of the *Engliſh* ſtill preſs an agreeable liquor from theſe grapes, which they aſſured me was as good as the beſt claret, and that it would keep for ſeveral years.

The manner of preparing this ſort of wine has been deſcribed at large in an almanack of this country, for the year 1743, and is as follows: the grapes are collected from the twenty firſt of *September* to about the eleventh of *November*, that is as they grow ripe: they muſt be gathered in dry weather, and after the dew is gone off: the grapes are cleared of the cobwebs, dry leaves, and other things adhering to them. Next a great hogſhead is prepared which has either had treacle or brandy in; it is waſhed very

very clean, one of the bottoms beat out, and the other placed on a ſtand for the purpoſe, or on pieces of wood in the cellar, or elſe in a warm room, about two feet above the ground: the grapes are put into this hogſhead, and as they ſink lower in three or four days time more are added. A man with naked feet gets into the hogſhead and treads the grapes, and in about half an hour's time the juice is forced out; the man then turns the loweſt grapes uppermoſt, and treads them for about a quarter of an hour: this is ſufficient to ſqueeze the good juice out of them: for an additional preſſure would even cruſh the unripe grapes, and give the whole a diſagreeable flavour. The hogſhead is then covered with a thick blanket; but if there is no cellar, or it is very cold, two are ſpread over it. Under this covering the juice is left to ferment for the firſt time, and in the next four or five days it ferments and works very ſtrongly. As ſoon as the fermentation ceaſes, a hole is made about ſix inches from the bottom, and ſome of the juice is tapped off about twice in a day. As ſoon as this is clear and ſettled, it is poured into an anker of a middling ſize; for from twenty buſhels of grapes, they get about as many gallons of juice: the anker remains untouched

touched and the muſt in it ferments a ſecond time: at this time it is neceſſary that the anker be quite full; the ſcum which ſettles at the bunghole, muſt be taken off, and the anker always filled up with more muſt, which is kept ready for that purpoſe: this is continued till chriſtmas, when the anker may be ſtopped up; at laſt the wine is ready in *February* and bottled. It is likewiſe uſual here, to put ſome of the ripe grapes into a veſſel in order to make a vinegar, and that which is got by this means is very good. Several people made brandy from theſe grapes which has a very pleaſant taſte, but is ſtill more pleaſant, if the fruits of the perſimon are mixed with it. The wood of theſe vines is of no uſe, it is ſo brittle that it cannot be uſed for ſticks: on cutting into the ſtem, a white, inſipid reſin comes out a few hours after the wound is made. In many gardens vines are planted for the purpoſe of making arbours for which they are indeed excellent; as their large and plentiful leaves form a very cloſe cover againſt the ſcorching heat of the ſun. When the vines flower here in *May* and *June*, the flowers exhale a ſtrong, but exceeding pleaſant and refreſhing ſmell, which is perceptible even at a great diſtance. Therefore on coming into the woods about

about that time, you may judge from the ſweet perfume in the air, ariſing from the flowers of the vines, that you are near them, though you do not ſee them. Though the winters be ever ſo ſevere, yet they do not affect the vines. Each grape is about the ſize of a pea, but further ſouthward they are ſaid to be of the ſize of common raiſins, and of a finer flavour. Further up in the country, during a part of autumn, they are the chief food of bears, who climb up the trees in order to pluck them. People are of opinion that if the wild vines were cultivated with more care, the grapes would grow larger, and more palatable.

December the 5th. I SHALL here mention two prognoſticks of the weather, which were greatly valued here. Some people pretended to foretel that the enſuing winter would not be a ſevere one: this they conjectured from having ſeen wild geeſe and other migratory birds go to the ſouth in *October*, but return a few days ago in great numbers, and even paſs on further to the north. Indeed the enſuing winter was one of the moſt temperate ones.

SEVERAL perſons likewiſe aſſured us that we ſhould have rain before to morrow night. The reaſon they gave for this conjecture was, that this morning at ſun riſing, from their

their windows they had ſeen every thing very plainly on the other ſide of the river, ſo that it appeared much nearer than uſual, and that this commonly foreboded rain. This preſage was likewiſe pretty exactly fulfilled.

THE Indians before the arrival of the *Europeans*, had no notion of the uſe of iron, though that metal was abundant in their country. However they knew in ſome meaſure how to make uſe of copper. Some *Dutchmen* who lived here, ſtill preſerved the old account among them, that their anceſtors on their firſt ſettling in *New York* had met with many of the Indians, who had tobacco pipes of copper, and who made them underſtand by ſigns, that they got them in the neighbourhood: afterwards the fine copper mine was diſcovered, upon the *ſecond river* between *Elizabeth-town* and *New York*. On digging in this mine, the people met with holes worked in the mountain, out of which ſome copper had been taken, and they found even ſome tools, which the Indians probably made uſe of, when they endeavoured to get the metal for their pipes. Such holes in the mountains have likewiſe been found in ſome parts of *Penſylvania*, viz. below *Newcaſtle* towards the ſea ſide, and always ſome marks of a copper

copper ore along with them. Some people have conjectured, that the *Spaniards*, after diſcovering *Mexico*, ſailed along the coaſts of *North America*, and landed now and then, in order to enquire whether any gold or ſilver was to be met with, and that they perhaps made theſe holes in the mountains: but ſuppoſing them to have made ſuch a voyage along the coaſts, they could not immediately have found out the copper mines; and they probably did not ſtop to blaſt this ore, as they were bent only upon gold and ſilver; it is therefore almoſt undoubted that the Indians dug theſe holes: or may we be allowed to ſuſpect that our old *Normans*, long before the diſcoveries of *Columbus*, came into theſe parts and met with ſuch veins of copper, when they ſailed to what they called the *excellent Wineland*,* of which our ancient traditional records called *Sagor* ſpeak, and which undoubtedly was *North America*. But in regard to this, I ſhall have occaſion in the ſequel better to explain my ſentiments. It was remarkable, that in all thoſe places where ſuch holes have lately been found in the mountains, which manifeſtly ſeem to

* See for this opinion the ſcarce and curious work intitled, *Torfæi hiſtoria Vinlandiæ antiquæ ſeu partis Americæ ſeptentrionalis. Hafniæ* 1715. 4to. F.

have been dug by men, they were always covered with a great quantity of earth, as if they were intended to remain hidden from ſtrangers.

December the 6th. On long voyages the ſailors ſometimes catch ſuch fiſh as are known to none of the ſhip's company; but as they are very greedy after freſh proviſions, they ſeldom abſtain from eating them. however it proves often venturing too much, experience having ſhown, that their want of caution has often coſt them their lives, for ſometimes poiſonous fiſh are caught. But there is a method of finding them out, as I have heard from ſeveral captains of ſhips: it is uſual when ſuch unknown fiſh are boiled, to put a ſilver button, or any piece of ſilver into the kettle, which if the fiſh be poiſonous, will turn quite black, but if it be not, it will not change: ſome of the ſeamen referred to their own repeated experience.*

Mr. *Franklin* and ſeveral other gentlemen frequently told me, that a powerful Indian,

* This experiment with the ſilver, ſuppoſes that the broth of the fiſh would be ſo ſtrong as to act as a ſolvent upon the ſilver; but there may be poiſons, which would not affect the ſilver, and however prove fatal to men; the ſureſt way therefore would be to ſuppreſs that appetite, which may become fatal not only to a few men of the crew, but alſo endanger the whole ſhip, by the loſs of neceſſary hands. F.

Indian, who poſſeſſed *Rhode Iſland* had ſold it to the *Engliſh* for a pair of ſpectacles: it is large enough for a prince's domain, and makes a peculiar government at preſent. This Indian knew to ſet a true value upon a pair of ſpectacles: for undoubtedly if thoſe glaſſes were not ſo plentiful, and only a few of them could be found, they would on account of their great uſe, bear the ſame price with diamonds.

THE *ſervants* which are made uſe of in the *Engliſh American* colonies are either free perſons, or ſlaves, and the former are again of two different ſorts.

1. THOSE who are quite free ſerve by the year, they are not only allowed to leave their ſervice at the expiration of their year, but may leave it at any time when they do not agree with their maſters. However in that caſe they are in danger of loſing their wages, which are very conſiderable. A man ſervant who has ſome abilities, gets between ſixteen and twenty pounds in *Penſylvania* currency, but thoſe in the country do not get ſo much. A ſervant maid gets eight or ten pounds a year: theſe ſervants have their food beſides their wages, but muſt buy their own clothes, and what they get of theſe they muſt thank their maſter's goodneſs for.

2. The ſecond kind of free ſervants conſiſt of ſuch perſons as annually come from *Germany*, *England* and other countries, in order to ſettle here. Theſe new comers are very numerous every year: there are old and young ones, and of both ſexes; ſome of them have fled from oppreſſion, under which they ſuppoſed themſelves to have laboured. Others have been driven from their country by perſecution on account of religion; but moſt of them are poor, and have not money enough to pay their paſſage, which is between ſix and eight pounds ſterling for each perſon; therefore they agree with the captain that they will ſuffer themſelves to be ſold for a few years, on their arrival. In that caſe the perſon who buys them, pays the freight for them, but frequently very old people come over, who cannot pay their paſſage, they therefore ſell their children, ſo that they ſerve both for themſelves and for their parents: there are likewiſe ſome who pay part of their paſſage, and they are ſold only for a ſhort time. From theſe circumſtances it appears, that the price of the poor foreigners who come over to *North America* is not equal, and that ſome of them ſerve longer than others: when their time is expired, they get a new ſuit of clothes from their maſter

maſter, and ſome other things: he is likewiſe obliged to feed and clothe them during the years of their ſervitude. Many of the *Germans* who come hither, bring money enough with them to pay their paſſage, but rather ſuffer themſelves to be ſold, with a view that during their ſervitude they may get ſome knowledge of the language and quality of the country, and the like, that they may the better be able to conſider what they ſhall do when they have got their liberty. Such ſervants are taken preferable to all others, becauſe they are not ſo dear; for to buy a Negroe or black ſlave, requires too much money at once; and men or maids who get yearly wages, are likewiſe too dear; but this kind of ſervants may be got for half the money, and even for leſs; for they commonly pay fourteen pounds, *Penſylvania* currency, for a perſon who is to ſerve four years, and ſo on in proportion. Their wages therefore are not above three pounds *Penſylvania* currency per ann. This kind of ſervants, the *Engliſh* call *ſervings*. When a perſon has bought ſuch a ſervant for a certain number of years, and has an intention to ſell him again, he is at liberty to do ſo; but he is obliged, at the expiration of the term of the ſervitude to provide the uſual ſuit of cloaths for the ſervant, un-

leſs he has made that part of the bargain with the purchaſer. The *Engliſh* and *Iriſh* commonly ſell themſelves for four years, but the *Germans* frequently agree with the captain before they ſet out, to pay him a certain ſum of money, for a certain number of perſons; as ſoon as they arrive in *America*, they go about and try to get a man who will pay the paſſage for them. In return they give according to the circumſtances one, or ſeveral of their children to ſerve a certain number of years, at laſt they make their bargain with the higheſt bidder.

3. The *Negroes* or *Blacks* make the third kind. They are in a manner ſlaves; for when a Negro is once bought, he is the purchaſer's ſervant as long as he lives, unleſs he gives him to another, or makes him free. However it is not in the power of the maſter to kill his Negro for a fault, but he muſt leave it to the magiſtrates to proceed according to the laws. Formerly the Negroes were brought over from *Africa*, and bought by almoſt every one who could afford it. The quakers alone ſcrupled to have ſlaves; but they are no longer ſo nice, and they have as many Negroes as other people. However many people cannot conquer the idea of its being contrary to the laws

laws of chriſtianity to keep ſlaves. There are likewiſe ſeveral free Negroes in town, who have been lucky enough to get a very zealous quaker for their maſter, who gave them their liberty, after they had faithfully ſerved him for ſome time.

At preſent they ſeldom bring over any Negroes to the *Engliſh* colonies, for thoſe which were formerly brought thither have multiplied conſiderably. In regard to their marriage they proceed as follows: in caſe you have not only male but likewiſe female Negroes, they muſt intermarry, and then the children are all your ſlaves: but if you poſſeſs a male Negro only, and he has an inclination to marry a female belonging to a different maſter, you do not hinder your Negro in ſo delicate a point; but it is no advantage to you, for the children belong to the maſter of the female; it is therefore advantageous to have Negro-women. A man who kills his Negro muſt ſuffer death for it: there is not however an example here of a white man's having been executed on this account. A few years ago it happened that a maſter killed his ſlave; his friends and even the magiſtrates ſecretly adviſed him to leave the country, as otherwiſe they could not avoid taking him priſoner, and then he would be con-

demned to die according to the laws of the country, without any hopes of ſaving him. This lenity was employed towards him, that the Negroes might not have the ſatiſfaction of ſeeing a maſter executed for killing his ſlave; for this would lead them to all ſorts of dangerous deſigns againſt their maſters, and to value themſelves too much.

THE Negroes were formerly brought from *Africa*, as I mentioned before; but now this ſeldom happens, for they are bought in the *Weſt Indies*, or *American Iſlands*, whither they were originally brought from their own country: for it has been found that on tranſporting the Negroes from *Africa*, immediately into theſe northern countries, they have not ſuch a good ſtate of health, as when they gradually change places, and are firſt carried from *Africa* to the *Weſt Indies*, and from thence to *North America*. It has frequently been found, that the Negroes cannot ſtand the cold here ſo well as the Europeans or whites; for whilſt the latter are not in the leaſt affected by the cold, the toes and fingers of the former are frequently frozen. There is likewiſe a material difference among them in this point; for thoſe who come immediately from *Africa*, cannot bear the cold ſo well as thoſe who are either born in this country, or have

have been here for a conſiderable time; for the froſt eaſily hurts the hands or feet of the Negroes which come from *Africa*, or occaſions violent pains in their whole body, or in ſome parts of it, though it does not at all affect thoſe who have been here for ſome time. There are frequent examples that the Negroes on their paſſage from *Africa*, if it happens in winter, have ſome of their limbs deſtroyed by froſt on board the ſhip, when the cold is but very inconſiderable and the ſailors are ſcarce obliged to cover their hands. I was even aſſured, that ſome Negroes have been ſeen here, who have had an exceſſive pain in their legs, which afterwards broke in the middle, and dropt entirely from the body, together with the fleſh on them. Thus it is the ſame caſe with men here, as with plants which are brought from the ſouthern countries, and cannot accuſtom themſelves to a colder climate.

The price of Negroes differs according to their age, health and abilities. A full grown Negro coſts from forty pounds and upwards to a hundred of *Penſylvania* currency. There are even examples that a gentleman has paid hundred pounds for a black ſlave at *Philadelphia*, and refuſed to ſell him again for the ſame money. A Negro boy, or girl, of two or three years old, can hardly be got for leſs than eight or fourteen

fourteen pounds in *Penſylvanian* currency. Not only the quakers, but likewiſe ſeveral chriſtians of other denominations ſometimes ſet their Negroes at liberty. This is done in the following manner: when a gentleman has a faithful Negro who has done him great ſervices, he ſometimes declares him independent at his death. This is however very expenſive; for they are obliged to make a proviſion for the Negro thus ſet at liberty, to afford him ſubſiſtence when he is grown old, that he may not be driven by neceſſity to wicked actions, or that he may be at any body's charge, for theſe free Negroes become very lazy and indolent afterwards. But the children which the free Negro has begot during his ſervitude are all ſlaves, though their father be free. On the other hand thoſe Negro children are free whoſe parents are at liberty. The Negroes in the *North American* colonies are treated more mildly, and fed better than thoſe in the *Weſt Indies*. They have as good food as the reſt of the ſervants, and they poſſeſs equal advantages in all things, except their being obliged to ſerve their whole life time, and get no other wages than what their maſter's goodneſs allows them: they are likewiſe clad at their maſter's expence. On the contrary, in the *Weſt Indies*, and eſpecially in the *Spaniſh Iſlands*

Iſlands they are treated very cruelly; therefore no threats make more impreſſion upon a Negro here, than that of ſending him over to the *Weſt Indies*, in caſe he would not reform. It has likewiſe been frequently found by experience, that when you ſhow too much remiſſneſs to theſe Negroes, they grow ſo obſtinated, that they will no longer do any thing but of their own accord: therefore a ſtrict diſcipline is very neceſſary, if their maſter expects to be ſatisfied with their ſervices.

In the year 1620, ſome Negroes were brought to *North America* in a *Dutch* ſhip, and in *Virginia* they bought twenty of them. Theſe are ſaid to have been the firſt that came hither. When the Indians who were then more numerous in the country than at preſent, ſaw theſe black people for the firſt time, they thought they were a true breed of Devils, and therefore they called them *Manitto* for a great while: this word in their language ſignifies not only God, but likewiſe the Devil. Some time before that, when they ſaw the firſt *European* ſhip on their coaſts, they were perfectly perſuaded that God himſelf was in the ſhip. This account I got from ſome Indians, who preſerved it among them as a tradition which they had received from their anceſtors: therefore the arrival of the Negroes ſeemed

to

to them to have confuſed every thing; but ſince that time, they have entertained leſs diſagreeable notions of the Negroes, for at preſent many live among them, and they even ſometimes intermarry, as I myſelf have ſeen.

The Negroes have therefore been upwards of a hundred and thirty years in this country: but the winters here eſpecially in *New England* and *New York*, are as ſevere as our *Swediſh* winters. I therefore very carefully enquired whether the cold had not been obſerved, to affect the colour of the Negroes, and to change it, ſo that the third or fourth generation from the firſt that came hither, were not ſo black as their anceſtors. But I was generally anſwered, that there was not the leaſt difference of colour to be perceived; and that a Negro born here of parents which were likewiſe born in this country, and whoſe anceſtors both men and women had all been blacks born in this country, up to the third or fourth generation, was not at all different in colour, from thoſe Negroes who are brought directly over from *Africa*. From hence many people conclude, that a Negro or his poſterity do not change colour, though they continue ever ſo long in a cold climate; but the mixing of a white man with a Negro woman, or of a Negro with a white woman has

has a different effect, therefore to prevent any diſagreeable mixtures of the white people and Negroes, and that the Negroes may not form too great an opinion of themſelves, to the diſadvantage of their maſters, I am told there is a law made prohibiting the whites of both ſexes to marry Negroes, under pain of death, and deprivation of the clergyman who marries them: but that the whites and blacks ſometimes mix, appears from children of a mixed complexion, which are ſometimes born.

It is likewiſe greatly to be pitied, that the maſters of theſe Negroes in moſt of the *Engliſh* colonies take little care of their ſpiritual welfare, and let them live on in their pagan darkneſs. There are even ſome, who would be very ill pleaſed at, and would by all means hinder their Negroes from being inſtructed in the doctrines of chriſtianity, to this they are partly led by the conceit of its being ſhameful, to have a ſpiritual brother or ſiſter among ſo deſpicable a people, partly by thinking that they ſhould not be able to keep their Negroes ſo meanly afterwards; and partly through fear of the Negroes growing too proud, on ſeeing themſelves upon a level with their maſters in religious matters.

Several writings are well known, which mention, that the Negroes in *South America*

rica have a kind of poiſon with which they kill each other, though the effect is not ſudden, but happens a long time after the perſon has taken it: the ſame dangerous art of poiſoning is known by the Negroes in *North America*, as has frequently been experienced. However only a few of them know the ſecret, and they likewiſe know the remedy againſt it, therefore when a Negro feels himſelf poiſoned and can recollect the enemy, who might poſſible have given him the poiſon, he goes to him, and endeavours by money and entreaties to move him to deliver him from the poiſon; but if the Negro is malicious, he does not only deny that he ever poiſoned him, but likewiſe that he knows a remedy againſt it: this poiſon does not kill immediately, for ſometimes the ſick perſon dies ſome years after. But from the moment he has the poiſon he falls into a conſumption and enjoys few days of good health: ſuch a poor wretch often knows that he is poiſoned, the moment he gets the poiſon. The Negroes commonly employ it on ſuch of their brethren as behave well, are beloved by their maſters, and ſeparate as it were from their countrymen, or do not like to converſe with them. They have likewiſe often other reaſons for their enmity; but there are few examples of their having

having poiſoned their maſters. Perhaps the mild treatment they receive, keeps them from doing it, or perhaps they fear that they may be diſcovered, and that in ſuch a caſe, the ſevereſt puniſhments would be inflicted on them.

THEY never diſcover what the poiſon conſiſts of, and keep it ſecret beyond conception. It is probable that it is a very common thing which may be got all the world over, for wherever they are they can always eaſily procure it. Therefore it cannot be a plant, as ſeveral learned men have thought; for that is not to be met with every where. I have heard many accounts here of Negroes who have been killed by this poiſon. I ſhall only mention one incident which happened during my ſtay in this country. A man here had a Negro who was exceedingly faithful to him, and behaved ſo well, that he would not have given him for twenty other Negroes. His maſter likewiſe ſhewed him a peculiar kindneſs, and the ſlave's conduct equalled that of the beſt chriſtian ſervant; he likewiſe converſed as little as poſſible with the other Negroes; on that account they hated him to exceſs, but as he was ſcarce ever in company with them, they had no opportunity of conveying the poiſon to him, which they

they had often tried. However on coming to town during the fair (for he lived in the country) ſome other Negroes invited him to drink with them. At firſt he would not, but they preſſed him till he was obliged to comply. As ſoon as he came into the room, the others took a pot from the wall and pledged him, deſiring him to drink likewiſe: he drank, but when he took the pot from his mouth, he ſaid what beer is this? It is full of ******. I purpoſely omit what he mentioned, for it ſeems undoubtedly to have been the name of the poiſon with which malicious Negroes do ſo much harm, and which is to be met with almoſt every where. It might be too much employed to wicked purpoſes, and it is therefore better that it remains unknown. The other Negroes and Negro-women fell a laughing at the complaints of their hated countryman, and danced and ſung as if they had done an excellent action, and had at laſt obtained the point ſo much wiſhed for. The innocent Negro went away immediately, and when he got home, ſaid that the other Negroes had certainly poiſoned him: he then fell into a conſumption, and no remedy could prevent his death.

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